

1782
A COMPLEAT
TREATISE
OF THE
Stone and Gravel.

Comprising its *Origin, Symptoms*, best
way of *Easing*, true Method of *Cutting*,
and divers remarkable Histories of *Cu-*
ring many cruelly afflicted Patients.

WITH AN
Ample Discourse on *LITHONTRIPTICK*;
OR,
Stone-breaking Medicines.

By *JOHN GREENFIELD, M.D.*
of the *College of Physicians, LONDON.*

THE WHOLE
Illustrated with proper *Figures* of the *Operation*, and
Descriptions on *Copper-Plates*, of some uncommon
Stones, taken from Persons He has Cut and others.

Absolutely Necessary
To be Read by Persons labouring under that Dangerous
and Dreadful *Disease*, or the suspicion thereof.

L O N D O N:
Printed for *Ralph Smith*, under the *Royal-Exchange*,
and *B. Lintott*, at the *Cross-Keys*, between the Two
Middle-Temple-Gates, Fleetstreet. 1710.

COMPLIMENTARY
TREATISE

OF THE
Stone and Gravel.

Containing the Origin, Symptoms, and
the most effectual Methods of
Curing the same.



By JOHN GREENFIELD, M.D.
of the College of Physicians, LONDON.

THE WHOLE
Illustrated by Robert A. Smith, of the General, and
Dedicated to the College of Physicians, of the University
of London, by the Author.

LONDON:
Printed for James Smith, in the Strand, near the Royal Exchange,
and at the College of Physicians, in the Strand, 1790.

TO THE
High and Mighty
PRINCE

*Thomas Duke of Norfolk,
Earl Mareschal and Here-
ditary Mareschal of Eng-
land: Earl of Arundell,
Surrey, Norfolk and Nor-
wich; Baron-Mowbray,
Howard, Segrave, Brews
of Gower, Fitz-Alan of
Clun and Oswaldestre, Mal-
travers, Greystock, Furni-
vall, Verdon, Lovetot,
Stange of Blackmere, and
Howard of Castle-Rising,*

A 2

First

First Duke, First Earl, and
First Baron of *England*,
and Chief of the Illustri-
ous Family of *HOWARD*.

May it please your Grace,

AS it is an unspeakable Satis-
faction to me, that I may
offer this little Treatise at your
Grace's Feet, when I consider the
Reputation, and other Advantages
it will receive from the Patronage
of your Illustrious Name; so on
the other side I must Blush, and
Humbly ask Pardon for my Pre-
sumption, when I reflect on the un-
worthiness of the Performance.

Dedications are commonly de-
sign'd by Authors, as Panegyrics
to their Patrons, from which rule I
shall deviate for two Reasons.

First,

The Dedication.

v

First, my Lord, both your Name and your Virtues are so Celebrated throughout Great Britain, that it is impossible for any to see the one, without being put in mind of the other.

The second reason, why I dare not Exspatiate on your Grace's high Merit, is your Character, from which I am sure, that you are as averse of hearing your own Praises, as I am incapable of setting them forth. I am unacquainted with the Justness of Expression, and a Stranger to Courtly Language.

Thus much I know; that, when such as I, are admitted to make their Addresses to Persons of the Duke of Norfolk's distinguish'd Quality, and refined Conversation, the only way not to be troublesome, is to be short: In sense of which I beg leave, that, wishing your

A 3

Grace

Grace all imaginable Blessings, I
may have the Honour of Subscri-
bing my self in the most respectful
manner,

Your Grace's

Most Humble, most Obedient,

and most devoted Servant,

JOHN GREENFIELD.

THE

THE PREFACE.

EXperientia est Stultorum Magistra, is an admirable saying, but misunderstood by abundance, for it means not, that Fools are taught by Experience only, but that, Practice is always Erroneous, when it is not built upon a good Theory; and yet the finest Speculations, and the most Sublime Thoughts are worth little to Mankind, if they don't put something in action, so as to be made usefull to Humane Life: For Virtus in Actione consistit. I am altogether of the Opinion of a certain Author, who says; Anatomy, Chymy and Botany, and the whole Circle of Sciences, that refer to Physic, are only serviceable,

when they conspire to improve a regular and safe Practice; when they carry on any different design, their Positions are deservedly neglected, as idle and useless Curiosities, and the only plea, they make, is the Diversion and Entertainment of a few, whose heads are turn'd that way; whereas the advantage and benefit of the World, is the result of Practical Truths.

That Great Man Sylvius de le Boe, under whom I had the happiness to be bred, had never been call'd the Star of the University, and his Theoretical Notions would never have been receiv'd with that general Applause, which they deservedly met with, if they had not been the Foundation of a firm and judicious Practice.

I have been a Physician many Years, have acted with Reason and Caution, and always been able to give a rational account of my proceedings with my Patients; and have not only been all my Life conversant in what belongs to the Practice of Physic in general; but likewise applied my self with great diligence to the difficult Operation of Lithotomy, and am more particularly acquainted with that grievous Distemper the Stone; by which I have not only been consulted by great numbers of Patients, that labour'd under that Miserable Torture, both in the Bladder and the Kidneys, but likewise from the Vicinity of the Symptoms, have had an opportunity of treating the other Diseases, that are incident to those Parts; and therefore to be more serviceable to my Generation, I
was

was willing to impart to the World some useful Observations, which I have made in this Distemper, and for its Ease and Cure, as far as practicable, some often tried and approved of Medicines.

To do this I was forced to trace this Distemper through all its Signs and Causes, and consequently oblig'd to say a great many things, that have been said by others; because it was otherwise impossible to render those remarks useful, for which I wrote the whole; I have also given the exact Delineation of some remarkable Stones which I and others have Extracted, and taken out of the Bodies of both Sexes, and to make the Treatise more compleat, I have inserted a full Description of Lithotomy, and to that end borrowed the Figures and Directions of that Ingenious French-Man, Monsieur

sieur Tolet, with little alteration, and not being one of those, qui nisi quod ipsi dixerint, nil recte dictum putant, I have contented my self with only adding to his Text, some Histories and Observations, as they have occur'd in my Practice. I have likewise treated in a particular manner of those Remedies, that under the Specious Name of Lithontriptics make such a great bustle among us; and given the necessary Caution against several Medicines, that, tho' of admirable Vertue in a great many Cases, are very Mischievous, when abused; I have laid open the Danger, that generally attends all unskillful Applications.

That I have made no greater Additions of my own, and kept from the Eyes of the Vulgar some noted particulars, as to the Practice
of

of Lithotomy, &c. I desire to be pardon'd: Whoever dies with any usefull Secret, is unjust to the World, but he, that reserves nothing from the public view, is as injurious to his Successors; and how this (being *orbis prole*) could be my plea, I'll let you know.

It was common amongst the Ancients, that those who would not Marry, or such as were Married but had no Children to inherit, what they had, adopted others for their own: Nay, it has been the Opinion of many, that those, who made themselves Parents by Adoption, were of the two the most likely to have Comfort of their Children; because such were at liberty to chuse those whom they were sure to like, whilst others, that trusted to a natural Issue, always ran a great bazard, because of the uncertainty

certainty of what and how they might prove.

I am persuaded, Reader, that by this time you think it strange, I should mention a thing, which at first sight seems so little to my purpose: But your wonder will cease, when you are acquainted with my Reason, The occasion is this: Ever since it has pleased God to deprive me of, and take to himself the Children, with which he had blessed me, I strove to agree with some Ingenious Young Physician, that should delight in Lithotomy, to whom I might freely and without reserve impart the fruits of so long a Practice, as well as early Studies; which at last I accomplish'd to my Hearts desire, in pitching upon the Skillful Mr. Benjamin Marten, whose Industry and Application I have assisted with the many Observations, which

which an almost Forty Years Experience has furnish'd me with.

I thought fit, Reader, to acquaint you with this for two Reasons ; First, because being known in a great many County's, where I have Cut for the Stone with Success, I would take care, that those, who are not willing to trust any but my self, whilst I am alive, might not be disappointed, but know where to have one, in whom they might safely confide, when I am Dead ; tho' I thank God, I yet enjoy a perfect Health, and through his Mercy, may boast of an *Aquilæ Senectus*, notwithstanding the Malice and notorious Falsities of my restless Adversaries, who have industriously spread amongst the People that Age has made me incapable of Practice, that my Sight is bad, my Hand-shakes, my Strength fails,
nay,

nay, that I was Dead, and what
 not? The second reason I have for
 telling the World, what is between
 the said Mr. Benjamin Marten,
 Physician, and my self, is, to ob-
 viate the ill design of those injurious
 Reports, by acquainting the pub-
 lick that I have an able Assistant,
 from whom I have kept no Secret,
 either in Physic or Lithotomy,
 but communicated and instructed him
 in all the parts thereof, and who
 can (if any should be timerous and
 doubtful of me, tho' without cause)
 dexterously perform the Operation,
 my self standing by. However that
 through the infinite goodness of God
 I am still Master of my Intellects,
 have as good Strength, sound Me-
 mory, firm Sight, and steady Hand
 as heretofore, I appeal and refer my
 self to the Judgment of those Ho-
 nourable Physicians and my very
 good

good Friends of the College, with whom I am in great Amity, and of whose Society I have the Honour of being a Member. And as my former Skill and Capacity, in what I pretend to, could never deservedly be call'd in question; so now the Persons I have lately successfully Cut and recover'd; puts my present Ability out of all doubt, and shews the ill nature of those who so falsely Asperse me; 'tis but a little while since I Extracted a Stone as big as an Hen's Egg from a Young Gentlewoman, of Eighteen Years of Age, retinet Urinam, there was present the most Ingenious and Worthy Physician Dr. Cole; this puts me in mind of a Case I formerly met with, not unworthy relating, 'twas of a Young Lady of Stafford-shire, Aged Fifteen Years, from whom on the Nineteenth of May,

1685,

1685, I drew a Stone larger than Hen's Egg and recovered her; she went afterwards to Tunbridge, where by drinking the Waters another Stone about an Inch and half long, and something better than an Inch round, was forc'd out of one of the Ureters, (where it had been breeding,) into the Bladder; I was again sent for, and considering the bigness of the Stone, and how lately the Parts had suffer'd a great Dilatation, I concluded it might be brought away by Medicines, without the use of Instruments; therefore I prescribed strong Diuretics, which, forcing powerfully, caus'd the Stone to burst from her without much Pain; she quickly went home, and in a few Years Married, and has since been the happy Mother of Fourteen Children: I could give the names of a great many Persons that I have
a lately

lately Cut, and Extracted Stones from, but I must not, having no leave; and considering the Censorious and Nice Age we live in, I doubt not, but what I do now will be call'd Quackery by some; but that every one may judge whether it be or not; I desire my Reader's Patience for a Moment longer, whilst I say a Word or two upon this Matter.

Pride and Luxury have brought up many Fashions, and have made things either commendable or indecent, that in themselves are indifferent, and do neither good nor harm, as for Example,

Surgeons heretofore had all of them Signs, and their Shops were in view of the World; but that most of the latter are removed out of sight, and the former taken down, is not because they now desire to be
more

more obscure, but because it is the Fashion to have only their Names Writ on the Front of their Houses, with an Addition of what they are; and some not satisfied with that, add likewise what they were; which shews that they are still as willing to be employ'd as ever; for tho' the way of making themselves known is Genteelier as they imagine, it is not less effectual; unless you think that a small Sign, hanging amongst so many others is more taken notice of, than those vast Characters of Gold upon Black, that cannot be overlook'd by any Mortal that has sight enough to shun a Poet.

Now what looks well in a Surgeon would be ridiculous in a Physician, and only because it is not customary, or to be plain, because it is *infra dignitatem*, and they think themselves above it.

No Country for the bigness has bred more Phyficians that are Famous for their Writings than the Netherlands; and yet in Amfterdam, the Metropolis, all Doctors of Phyfic are oblig'd to have their Names and Profession writ on the outside of their Houses, infomuch, that thofe that fhould refuse to comply with this Custom, would not be counted as fuch.

By this means in time of need every body knows where to have a Phyfician, without the leaft detriment to any; for thofe that are Famous, and whose Names are up there, are sent for a great way, as well as here.

No Man is a Quack for ufing fair means to be known, but he is a Quack in any Trade or Profession whatever, that flying from the Occupation he was brought up to, In-
vades

vades the Employment and the Property of others; such as Insolently preferring themselves above Men of real Skill, by Bragging and Lies, impose upon the Credulous, and Impudently meddle with what they never understood, of which Cattle it was to be wish'd, we had not such numbers as we have.

That Common-wealth and only that (says Camerarius) is happy, where that of Horace is true.

Navim agere ignarus timet; A-
(brotanum ægro
 Non audet, nisi qui didicit, dare;
(quod Medicum est
 Promittunt Medici; tractant fa-
(brilia fabri.

But with us fabri tractant Medica, and there is no Trade so vile, nor Calling so mean and abject, but
 it

it yields some Pretenders to Physics, without regard of that of Perſius!

Publica lex hominum, Naturaque
(Continet hoc fas,
Ut teneat vetitos infertia debilis
(actus
Deluis Helleborum certus compes-
(cere puncto
Nescius Examen? Vetat hoc Na-
(tura Medendi,

But the audaciousness of our Quacks, if they can but 'scape the common Law of the Nation, is not to be frighten'd with the Publica lex hominum.

The Law forbids a Fuller to meddle with Dying, and one Trade may not encroach upon another; And shall the Practice of Physic alone (says Whitlock) be like the Spanish-

Spanish-Trade, free for any? Several have wonder'd that where Clippers and Coiners are put to Death, the bold Empirics, which are more hurtful to the Publick should go unpunish'd, since (as Forrestus wittily says) the former only deface and corrupt the Image of Cæsar, but the latter the Image of God himself.

And now I beg of the Candid and Impartial Reader that he would first consider, the swarms of those Ignorant Imposters, I speak of, that so boldly sound their Trumpets, and then judge whether the modest relation of truth, which I have given deserves the Name of Quackery; and whether what I have said, is unbecoming a Legal Physician, that
has

has spent so many Years in the
Study and Practice of Physic as
I have done ; after which I shall
recommend my self in his Favour,
and concluding wish him to fare-
well.

John Greenfield.

From my House against
the Sun-Tavern, in Thread-
Needle-street, behind the
Royal-Exchange, London,
May 10. 1710.

Note, What Litteral Faults may
have escap'd the Press, the
Reader is desir'd to Correct
with his Pen.

THE CONTENTS.

CHAP. I. <i>Of the Stone and where it is bred.</i>	Pag. 1
Chap. II. <i>Of the Causes of the Stone.</i>	17
Chap. III. <i>Of the Diagnostic Signs of the Stone in the Kidneys.</i>	62
Chap. IV. <i>Of the Diagnostic Signs of the Stone in the Bladder.</i>	71
Chap. V. <i>Of the Prognostic Signs of the Stone.</i>	76
Chap. VI. <i>Of what is to be observ'd by the the Lithotomist before the Operation.</i>	83
Chap. VII. <i>Of the method of Searching.</i>	89
Chap. VIII. <i>Of a Phymosis, and of a Stone in the Urethra.</i>	100
Chap. IX. <i>Of the time of Searching and Cutting; of the Instruments; of the Patients Diet, and of the first Preparation for the Operation.</i>	119
Chap. X. <i>Of the Posture and Situation into which Children are put, when they are to be Cut.</i>	139

Chap. XI.

The Contents.

	Page.
Chap. XI. <i>Of the different ways of extracting the Stone, amongst the rest of the Lithotomia Franconiana.</i>	144
Chap. XII. <i>Of the Apparatus Minor, or Lesser Operation for Men and Boys.</i>	153
Chap. XIII. <i>Of the Lesser and Greater Operation for Women and Maids.</i>	158
Chap. XIV. <i>Of the Apparatus Major, or Great Operation in Men and Boys.</i>	163
Chap. XV. <i>Of the Difficulties happening in this Operation.</i>	195
Chap. XVI. <i>Of the Symptoms of Lithotomy.</i>	200
Chap. XVII. <i>Of the Method of Curing those that are Cut, and removing their Symptoms.</i>	208
Chap. XVIII. <i>Of the Cure of the Gravel and Stone (as far as it will admit) without Cutting.</i>	230
Chap. XIX. <i>Of Lithontriptics, by way of Apology to the Art of Lithotomy.</i>	270

A

TREATISE

OF THE

Stone and Gravel.

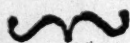
CHAP. I.

Of the Stone and where it is bred.

CHAP.
I.

THE Stone in the Body of Man is so much like to that of the Earth, that it has the same denomination; being called in Latin *Calculus*, which signifies a little Stone, hard and of Earthy intermixture:

CHAP. termixture: in Greek λίθος, The Dis-
 I. ease λιθίασις.



That in the Kidnies νεφρίτις, by the name of the Kidnies, which they call νεφρίτις. And though under that name all Diseases of the Kidnies may be understood; yet because of the Greatness and Violence of the Pains of the Stone, whereby it exceeds all other Diseases of those Parts, therefore this not undeservedly takes the Name Νεφρίτις, (*Nephritis*) as if we should call it καὶ ἕξονον the Disease of the Kidnies.

It is apparent therefore, that under the name of the Stone we understand a solid and hard Body, grown to the form of a Stone, especially in the Reins and in the Bladder. It is super-vacaneous to Enquire whether it be a Disease or a Symptom, such are only questions about a Name, and of no use
 even

even in Speculation ; because in several respects they may be diversly solved, tho' I cannot think that in a proper Sense it should be called a Disease, (notwithstanding *Galen's* Opinion) seeing there is no evil disposition of a Part, but what either follows or changes the disposition of that Part ; but it may be called a Cause, being apt to cause Obstruction, Exulceration, great Pain, and the like.

That the Kidnies are Pregnant with small Stones, Experience makes us sensible, which with dolorous Pangs, like the *Uterus* in Pains and Labour, they sometimes send forth. Of which this Question cometh to be considered.

Whether only in the Cavity of the Kidnies, and those Passages of the Ureters the Stone is generated, or else in the *Parenchyma*, or sub-

CHAP. stance of them? And hereof nei-
I. ther can be denied, we having the
Testimony of many Eminent Phy-
sicians, *Eustachius*, *Forestus* and o-
thers, whose practice have sufficient-
ly prov'd it; but a Stone growing
in the Substance of the Kidney, if
it becomes large, cannot fall into
the *Pelvis* thereof, without dilace-
rating and tearing it, because those
Caruncles, by Anatomists called
Mammillary Processes (by which only
there can be a Passage) have so small
Perforations, as will scarcely admit
a Hair of the Head.

What has been said of the Stone
in the Kidney, is near the same to
be understood, concerning that in
the Bladder; where it is evident
also, that it grows in two places:

The one in the Cavity of the
Bladder, where it grows in the midst
of the Urine; The other at that
end

Stone and Gravel.

5

end of the Ureters, inserted in the CHAP.
Bladder which before they enter I.
thereinto, do pass its double Mem-
brane one Fingers breadth; and in
the very Duplication of this Mem-
brane there often grows a Stone
firmly knit to the Tunicles of the
Bladder, and appears just as an
Acorn hangs in its Cup.

That Stones are likewise bred in
other Parts of our Body, besides
the Bladder and Kidnies, is aver'd
by the Testimony of both Ancient
and Modern Physicians.

That they are bred in the Guts,
Avicen and other Authors tell us;
Dr. Acosta, a *Portugal* Physician re-
lates, that a certain Patient of his
had a longlasting Looseness, which
not giving way to many Reme-
dies for a long time applied, was
at last perfectly Cur'd upon his
voiding a Four-square thin Stone,

CHAP. as here under delineated, tho' he
I. was before given over for Dead,
being so wonderfully worn by his
Looseness.



It is very remarkable what we read of a Young Man, who being extremely hot of Constitution, spare of Flesh and very prone to Lust, keeping no regular Course of Diet, but pampering his Belly, by fitts voided for two Years together numbers of Stones with his Excrements; before he found they were Stones that came away, he suspected them by the Indisposition he felt, to be Worm, he always had cruel Pain in his Flanks and lower part of his Belly, before he voided them, and when they came away, he

he was easie : Some of 'em were CHAP.
I.
round, and as big as Hasle-Nuts, exceeding compact and of an Ash colour; he had divers Physicians who differ'd about the cause of them, some saying one thing, and others another, and as each differed as to the Cause of their breeding, so every one variously prescribed Remedies, which after all trials had no effect as to the Cure; for at length the Malady being exasperated, the Patient fell into grievous Torments of his Belly, with suppression of his Excrements, which growing worse and worse, beyond the help of Emollient and Evacuating Glisters, and other Remedies, the Pain rather becoming thereby fiercer and fiercer, the Patient Died. The Body being open'd, there was found a Stone in form and bigness, resembling a Chestnut,

B 4 . sticking

CHAP. I. *Sticking fast to the Gut Colon, which*
 had caused the forecited Tragedy.

And others have been known to void at the same time Sand and Gravel by Urine, and many Stones as big as Capers by Stool.

Ambrose Parey, in the 19th Chapter of his Book of Monsters, gives the following Account, *John Magnus*, says he, 'The King's most Learned and Skilfull Physician, having in 'Cure a Woman, troubled with 'cruel torments of the Belly and 'Fundament, sent for me, that by 'putting a Speculum into the Fundament, he might see if he could 'perceive any discernable Cause of 'so great and Pertinacious a Pain; 'and when as he could see nothing, 'which might further him in the 'finding out the Cause of her Pain, 'following reason as a guide, by 'giving her after Glysters and Pur-
 gations,

'gations, he brought it so to pass, CHAP.
'that she at length voided a Stone II.
'at her Fundament of the bigness of
'a Tennis-ball, which once voided
'all her Pains ceased.

But here it is to be observ'd, that
Stones are not first generated in the
Guts, by reason of their Vermicu-
lar Motion which hinders any such
Concretion, but those found there,
or voided by the Fundament, are
bred in the Gall Bladder, and fall
through the *Ductus Cholidochus* into
the Guts, where according to their
Magnitude and Figure they may
stick, grow bigger, and cause dread-
ful Symptoms.

Of a Stone in the Womb we read
in *Hippocrates*; who says 'That
'the Servant of *Dyseris*, in *Larissa*,
'when she was Young, in using Ve-
'nery, was much pained, and tho'
'sometimes without Pain, yet never
'Con-

CHAP.

I.

‘Conceived: But when she was Sixty
 ‘Years old, she was pained usually in
 ‘the Afternoon, as if she had been
 ‘in Labour; and one Day having
 ‘Eaten many Leeks in the Forenoon,
 ‘she was taken with very violent, and
 ‘far exceeding all her former, Pains,
 ‘and felt a certain rough thing,
 ‘rising up in the Orifice of her
 ‘Womb. But she falling into a
 ‘swoon, another Woman putting in
 ‘her Hand, got out a sharp Stone,
 ‘of the bigness of a Whirl, or Leaden
 ‘Plummer, and then she forthwith
 ‘became well and remained so.

Hallerius lib. de Palpitatione Cordis,
Cap. 1. Tells us, That a certain
 Woman, who for the space of four
 Months was troubled with an in-
 credible Pain in making Water,
 being open’d when Dead, two
 Stones were found in her Heart,
 with many Abscesses, her Kidneys
 and Bladder being whole. *Za-*

' Zacutus Lusitanus gives the fol-
 ' lowing Account of Stones in the
 ' Lungs: A Man of Forty Years of
 ' Age being exceeding subject to Di-
 ' stillations of Rheum, was not able
 ' to breathe, unless he always sat up-
 ' right, in which posture he pass'd
 ' many Nights without Sleep: At
 ' length a shortness of Breath seiz'd
 ' him so violently, that he was al-
 ' most choak'd, his Physicians pre-
 ' scrib'd fundry Remedies; as Pur-
 ' gations, Pectorals, and other Me-
 ' dicines, usually given to scour a-
 ' way clammy Humours, wherewith
 ' the Cavities of the Lungs are
 ' wonted to be stuff'd, and being
 ' oppress'd with a dry Cough, ex-
 ' trem Anxiety & Clammy Phlegm;
 ' upon a strong forcing to Cough,
 ' he brought up with the Phlegm an
 ' Oblong hard rough Stone, resem-
 ' bling a Date-Stone, which being dis-
 ' charged

CHAP.

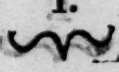
I.



CHAP. I. charged he was restored to his
former Health by the application
of convenient Remedies.

A certain Gentleman for Three Years together, at fits, brought up by Coughing every Day Seven times or oftner, Three or Four Stones, White, Hard, and very much resembling Hail-Stones for Form and Colour; this Man being otherwise in good Health, refus'd all Remedies, but to his cost: For a most vehement Cough seizing him, a great Vessel of his Lungs broke, and by his often and plentiful Bleeding, he was at last taken off by a Consumption.

Banschius, gives us four Examples of Stones in the Stomach, *Ephem. Med. Tom. 3. Observ. 18.* the first is out of *James Dobu Zuch*, who Reports, 'That a certain Woman, 'after long Pains in her Stomach, 'Vomited

Vomited up two Stones, about the CHAP.
bigness each of an Almond, and I.
was presently freed from the Gripes: 

The second out of *Laurentius Sholtius*,
who Writes that a certain Person
long troubled with cruel Pains in
his Stomach, at length Vomited up
a very large Oblong and hard
Stone, upon which his Pain ceased:
The Third out of the same Author,
of a Woman, who at Forty Years
of Age was troubled with a Pain
and Swelling of her Stomach,
want of Appetite, and continual
watching, in whose Stomach, after
she was Dead, were found as many
Stones as a Man could hold in the
hollow of his Hand, which being
long kept, mouldred away & crum-
bled into a kind of Yellow Sand.

The Fourth Example is of Count
George of Oppendorf, in whose Sto-
mach were also found several little
Stones. It

CHAP. I. It is very common that those who have had the Gout for many Years, have Stones grown in the Joints affected, nay, the Muscles and Flethy Parts themselves are not free from them.

‘ Mr. Denis Pomaret, a Skillful Surgeon of Montpellier, has the following Relation: A Priest Sixty Years of Age, of a Sanguine Complexion, was oftentimes troubled with an Inflammation of his Throat, especially when he strained himself more than ordinary in Singing, which Inflammation was usually cured by Bleeding and Gargling his Throat with Vinegar and Water.

He being taken again whilst I was inspecting his Throat, I saw an Extraneous Matter near the End of the Lower-Jaw-Bone of the Right-Cheek, like a Musquet-

quet-Bullet, which with my For-
ceps I drew out, and carefully wash-
ing it, found it to be no
other than a hard and
compact Stone, shap'd
like a Wild-Pear, as here
described; the Tail of it
being fastn'd into the
Muscles, called Mastoides; there
remained a round Mattering Ulcer,
which was cleansed with Honey;
and Wine, and healed.



Ambrose Parey says, *Anna Dom.*
1558, I opened in *John Boucher*, a
Taylor, dwelling in the Street of
St. *Honore*, a Watery Abscess in his
Knee, wherein I found a Stone,
white, hard; and smooth; of the
thickness of an Almond, which
being taken out, he recovered.

Thus we see that there is hardly
any part of the Body but Stones
have been found in it; *Hollerius* has
found

CHAP. found them in the Brain; Nicol.

I. Florentius, under the Tongue; Aetius in the Eyelids, and others in other places, as may be seen in the curious Observations of the Learned. Those that are desirous of more Examples, may read *Ant. Beniven. de abdit. morb. Sanat. caus. cap. 42. Rodericus Castrensis de meteor. Microcosm. Mat. Untzerus Johan. Kentmanns in his Treatise de calculis: Dodoneus Observ. Med. cap. 23. Hollerius de morb. intern. Schol. 29. & 30. Forrestus, Sennertus, Fabr. Hildanus. Julius Caesar, Scaliger, Langius, Gesner. Fernellius, Mercurialis, and the Prince of Physicians, Hippocrates himself.*

CHAP.

CHAP. II.

CHAP.
II.

Of the Causes of the Stone.

THE Causes of the Stone are two, the *Efficient* and the *Material*.

Qua causa in Macrocosmo gignit in humore lapides, ea & in Microcosmo. Sennertus institut. Med. Lib. 2. Part 2. Cap. 9.

Why should we not believe that Stones grow in our Bodies, as they grow without the Body? We find Stones grow in Bathes, in Fountains, in the Caves of Mountains, and Subterraneous places; where whole Pillars of Stone are found. In the *Danish Sea*, not far from *Lubeck* was found a branch of a Tree, in which was a Nest full of Birds, which were all turn'd
C into

CHAP. into Stone, as you may see in
 II. *Bernard Casius* his Fourth Book,
 First Part, First Chapter of Mineralogy.

In *Gothland* is a River which turns into Stone, whatever is thrown into it: Of which *Metamorphosis* *Frederick* the Emperor had a mind to make tryal; he took a Glove from his own Hand, and put his own Seal to the Glove, and had it thrown into the River, where after it had lain for some Days, that part of the Glove and the sealed place which had been immerg'd in the Water, was turned into perfect Stone; the other part which had not touched the Water, was meer Leather, as *Albertus Magnus* tells us, in his First Book of Minerals, Tract. 1. Chap. 7.

We read that in the Year 1320, between *Russia* and *Tartary*, in the
 Latitude

Latitude of 64 Degrees, a Herd of CHAP. II.
Cattle, Horses, Oxen, and Men
were turned into Stone: *Horrendum Spectaculum!* Of which John Baptista van Helmont in *Tractatu de Lithiasi* cap. 1. speaks thus,

Quod si inde absit miraculum, certe totus ille tractus non nisi petra est continua, rimis pervia, quam silente per multos dies vento depressaq; suprema aura fortis odor sanatis (qualis in Cuniculis sive fodinis aliquot Spectatur enecans odor) spirasse potuit, suosque inambulones una necuisse nocte; quæ tandem præ loci frigore putredinem inhibente transmutavit creaturas, quas antea pridem Enecuerat.

Lot's Wife was called *Statua Salis metallici humanæ figuræ*: See Paracelsus. For the *Efficient Cause* hereof, the Opinions of Physicians differ very much; for some raising Contemplations to superior Objects,

CHAP. derive it from the beginning of our
 II. Creation, as a Punishment on Man-
 kind for our Apostacy, esteeming
 it not strange, that that returns to
 Earth or Stone, which from Earth
 at first was produced, according to
 that saying of the Poet,

Unde genus durum sumus---

We are said to be of Earthy Con-
 stitution, and have Bones which
 may be compar'd to Stones in hard-
 ness and solidity: Such are the
Os-Petrosum, or Stony-Bone in the
 Organ of our Hearing, and the
Teeth, to which our most Wise
 Creator has given a middle Nature
 between that of Bones and Stones.
 Another conceiv'd Opinion there
 has been, that the Cause of the
 Stone was to be attributed to the
 immoderate heat of the Kidneys.

For

For they held that those thick, CHAP.
II.
glutinous, Phlegmatic, and Tartarous Excretions, which they call'd the *material* Cause of the Stone, were by little and little dried up, and (the thinner and more humid Parts being consum'd) reduced to the Consistence of a Stone, even as we see Medicamentous Stones, decocted and made of Juices of Herbs, and Minerals, by a gentle Heat and Exhalation.

But the improbability of this Opinion is evident to all, whom the Authority of the Ancients has not wholly prejudic'd.

For daily Experience teaches us, that old Persons, cold of Constitution, and Women, Phlegmatic and cold of Temper, as well as others, are obnoxious to this Malady.

CHAP.

II.

But they add, That if a thick and glutinous Matter may be harden'd into a Stony Substance by the heat of a Furnace, Why may not also a Viscous Matter be harden'd by a Preternatural heat into a Stone in the Body? To which I answer, Because no Person could be able to endure so great a heat in the Body as is that of a Furnace, which should necessarily be, before such a Matter could be harden'd into such a Substance.

And if it were generated by a moderate heat, (as some are of Opinion) then in Water it would be dissolved or dissolvable. As we see Clay, which, tho' dried with a small heat, is again resolved, being moistened with Water; and the same would consequently follow, especially to the Stone in the Bladder, which holds good Serum receiv'd from

from the Kidneys or Reins, and which CHAP.
is afterwards expell'd, being bur- II.
densome by its Weight or Acri-
mony, or both. And if it was
caused by a continuing heat, then
continual Fevers, Symptomatic,
Hectic, and a consuming of the
whole Body would follow: We
cannot therefore yeild that it
proceeds from such a heat; though
it is certain, that in this Disease
there is a heat Concomitant, yet
that precedeth not the Stone, but
occasionally is from it deriv'd, as
we see a Heat arise from a prick of
a Thorn in the Finger, yet the
Thorn is not deriv'd from that
Heat.

Others assign the Instrumental or
Efficient cause of it to Cold, which
gathers together the loole Particles
of Nitrous Salt; which, they are
of Opinion, may as well be per-

CHAP. II. formed in the Kidneys and Bladder
as in a Urinal.

This seems very Improbable, because the Body is enliven'd by a principle of Heat, deriv'd from the Blood; so that in reason it cannot be apprehended, that such Coldness, as long as the Body is animated with Life, can be found to give a power of Concretion to the Saline and Earthy parts of Liquors.

Van Helmont, and others, will have it, That the principal and most active Cause of the Generation of the Stone in the Body of Man, is deriv'd from a Petrifying Principle or Lapidific Spirit, that disposes the hard'ning Volatile Earth of the Urine to Petrifaction.

Van Helmont (says, *de la Van-guion*) does not think the Principles of the Urine, alone sufficient
for

for the production of the Stone, CHAP. II. but adds a *Petrific Ferment*, which he places in the Kidneys and Urinary Vessels, and reckons *that*, as a third agent, requir'd to fix and Coagulate the former; there is no Transmutative Principle in Nature, says that Author, without a Ferment: The Intestine motion of the Particles of the Urine is not the immediate cause of its Corruption; its Putrefaction does not arise from any vitious disposition of the Urine; but from a peculiar Corruptive Ferment, residing in the Kidneys and other Vessels.

Dr. Collins in his System of Anatomy, and the Learned Charleton in his Treatise, *de Lithiasi*, stand both up for this *Spiritus, Succus, or humer Petrificans*.

The cause of Petrification, says the former, Cannot be solely attributed

CHAP.

II.

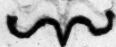
tributed to Salt, as having an inward Principle of Concretion, and tho' common Salt made up of minute Particles, may swell by many Accretions into great-lumps, and tho' the Coalition of many small Saline Parts may Constitute hard Bodies, as in *Sal Gem*, *Fossile* and *Marine* Salt; yet these 'Saline Concretions are different from those of Stones, as being less hard, not so solid, and more friable: So that the Principle of Petrification do's suppose not only Saline, but also Earthy Parts; which last gives Consistence, and the Saline binds the Earthy more close together, which is render'd still more firm, by a Chymous Glutinous Matter; whence the Compages of the Stone become more compact and hard, than that of Salt alone; as is most Conspicuous

spicuous in Artificial Coagulations, made by Coction of Salt-water, and also in a Natural Saline Concretion produced by an innate Principle in the Bowels of the Earth; so that a due proportion of Salt and Earth, is requisite to form a strong Concretion, by reason the Earthy Parts hinder the Solution of the Saline when they are moistned by liquid Bodies; and the Saline give the bond of mixtion, lest the Earthy being destitute of Salt, should constitute a loose body in the form of Powder; whereupon too great a quantity of Salt cannot turn an inconsiderable part of Earth into a Stone:

Whence it may be inferred; that upon a due proportion of Earth, being observ'd by Nature, the greater quantity of Salt makes a
more

CHAP. more solid and firm Concretion.

II.



So that Saline and Earthy Parts being united in a due quantity, and embodied with a Petrifying-Juice, or Spirit, do generate the Stone in the Body of Man.

But in the mean time, they are to consider, that the Lapidific penetrating Spirit, if such a one in the Urine there be, would not so much occasion the Stone in the Bladder, as it would turn the Kidneys and the rest of the Body into Stone, as it do's in the Macrocosm; it shall suffice us now to add, and show the Causes thereof according to our Opinion, which is plain and easily Conspicuous.

Riverius Reformatus Cap. 25. de Calculo Renum, hæc habet verba:

Rem acu tetigisse mihi videntur, qui pro generando in Renibus Calculo nihil aliud

aliud adducunt quàm Partes Sanguinis
terrestres & tartareas, quæ Viscidioris
paulò lymphæ quæ Continuo cum Urina
præterlabitur, & hypostasis audit, glu-
tine conjunctæ, & salibus quibus lotium
onustum est ulterius compactæ, lapidis
naturam induunt & figuram, concur-
rente ad hoc opus renum Compage &
flaccitie, & dilatatione glandularum re-
narium ductuumq; urinosorum.

CHAP.
II.


In the Analysis of the Urine it
appears, that it consists of divers
parts; For besides that there is in
it a plentiful Water, which is the
Basis of the Urine, a small part of
Choler, which confers that Goldlike,
or Citron colour to it, and a Phleg-
matic Matter (*lymphæ paulò Viscidior*)
swimming for most part on the top,
making a ring, and adhering to
the Vessel that contains it; There
is also a certain Salt and Earthy
part mix'd with it, proceeding from
the

CHAP. the necessary aliment, and perceivable from its gust, and what the *Urine* contains; being naturally in that of all Persons.

This *Earthy part*, therefore, thick and less inclin'd to motion, with which also it is very possible somewhat of *Salt* is admix'd, is the *material Cause* of the *Stone*.

For if through default of the *Chilifying part*, it abounds in greater quantity in the Body, than it ought, or be not well mix'd with the Blood, not being well digested or separated in the Stomach, by reason of the great plenitude thereof (with which much Nourishment must necessarily abound) it then passes from the Stomach with the *Chyle* into the *Veins*, and is carried thence with the Blood through the Ventracles of the Heart into the *Aorta*, or great Artery, thence
to

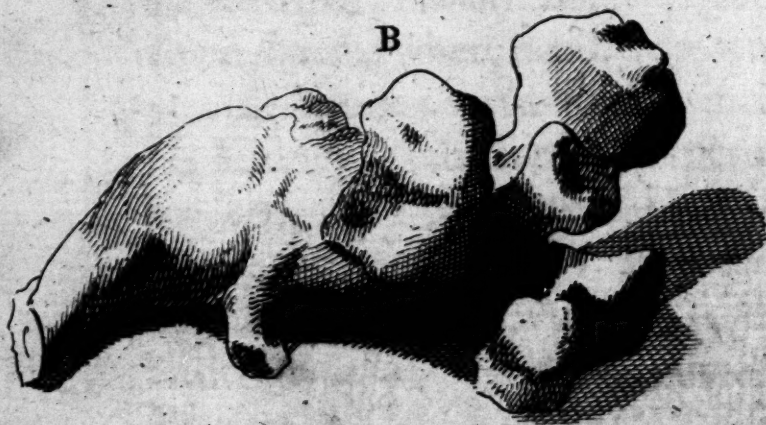
to the *Emulcents*, and in the furthest branches of those Arteries, or in the Muscles next thereunto, it lodges; and if it can't pass the *Mammillary* *Caruncles* (which our modern Anatomists call the Strainers) it easily rests in the *Tubules* or *Bason* of the Kidneys; where sticking fast, it at first becomes a small Particle, which with *Fernelius* we may call the *Kernel*, the *Rudiment* and *Original* of the Stone, which with time proceeding, the like new Matter more and more arriving to it, and feeding it, grows with one Shell upon another, till at length no Gluten intervening, but there being an immediate contact of Small Parts, it becomes a Stone, Coagmented of (as it were) many plates together. Even as we see in the *Bezoar-Stone*, and

CHAP. and likewise in Onions conflate of
II. divers Coats one upon another.
Thus it grows by little and little,
as our Experience and Occular In-
spection testifies.

How many have I Dissected and
seen Dissected when Dead, who
languish'd to Death by Stones
grown in their Kidneys, and after-
wards taken out? Of which I shall
mention a few.

One Mr. *Hammon* of *Hackney*,
who died Lethargick, at the House
of Old Mr. *Vander Ancker*, then in
Lime-street; when his Body was o-
pen'd, Stones were found in both
his Kidneys, which were obstructed
by 'em, and occasioned his Death.
There were present Dr. *Edw. Brown*,
our late President, now Deceas'd,
and Dr. *Allen*, then Physician of
Bethlem.

One



One Mr. *Vander Bergh*, a *Flan-* CHAP.
ders Merchant, whose Kidneys were II.
 both stopt with two great Stones
 as big as middle siz'd Balls, had me
 call'd in for Advice: I had Sir *Richard*
Blackmore to assist me: After us
 came in Dr. *Ratcliff* and Dr. *How*;
 but no help could be afforded, the
 Patient died.

In *April* last, 1709. I was sent
 for to Visit the Wife of Mr. *Edw.*
Grip, at the Sign of the *White-*
Swan, in *Shoemaker-Row*, in *Black-*
Friers; her Kidneys were wholly
 stop'd, each with a prodigious
 Stone, which prov'd her Death.
 You have here the exact Figures
 of the Stones taken from her
 when Dead. Dr. *Duglass*, Mr.
Harward, and Mr. *Gill*, Surgeons
 were present.

A The Stone found in the Right Kidney.

B The Stone in the Left Kidney.

D

The

CHAP.

II.

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The Gravelous and Calculous Constitution of the Reins, which the Learn'd *Fernelius* instances, may in some manner be admitted, if thereby we understand a greater streightness of the Pores, and of those small *Vessels* in the Kidneys, through which the Urine is naturally secerned; and this streightness of the Pores and Passages, is either from our *Embryonism*, or first *Original*, to which especially relates an hereditary Disposition, or else it is acquired in the Revolution of our Age, from those things which we call *Non-natural*.

For it may be very easily credible, that *Matter*, Sedentary, and not apt for Motion, being thick and of a terrene *Indoles*, finding those passages streight, through which it ought to pass, naturally stops and settles. Of this we may  
take

take a familiar example from the CHAP.  
Churn, where the Butter is separated II.  
from the Whey, only by motion and agitation, and then rests and settles, because it consists of Parts which are unapt for motion.

• A separation not unlike it, is also made in new Wine, as the most incomparable *Des Cartes* ingeniously demonstrates: And thus the subsiding *Matter*, growing more and more, by the Specific attraction of Similar Particles, in process of time is form'd into a perfect Stone.

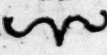
Of the Stone in the Bladder (its generation not differing from the former) there remains no difficulty to be solv'd: Only we may here note, that it do's not always take its Original from the Bladder, but oftentimes also from the Reins.

CHAP. For the Stone growing in the Tu-  
 II. *bule* or *Pelvis* of the Kidneys, some-  
 times also in the very substance  
 thereof, and falling through the  
*Ureter* into the *duplication* of the  
 Bladder, in that *Cavity* it stops,  
 where the smaller and more Lu-  
 brick Particles pass by it, but  
 the thicker and more gross remain :  
 so that sticking fast to the Tunics  
 of the Bladder, and not being e-  
 jected through the *Urethra*, it lays  
 at large, growing and increasing  
 with the continual Afflux of new  
 Matter. *Calculus in Vesica restitans*  
*crescit per orbes appositos : ita loquitur*  
*Acutiss.* Dr. Hermann. Boerhaave,  
*Profess. Med. Pract. in Acad. Lugd.*  
*Bat. in suis Aphorism de Cognoscend.*  
*& curand. Morb. p. 365.* Thus  
 the Stone in the Bladder has the  
 same *efficient* and *material* Cause  
 with that of the Kidneys, and dif-  
 fers



fers only in the place thereof, and its subject. CHAP.  
II.

Yet some seem to admire how the Stone can be form'd in the Bladder, in the midst of the Urine, which they rather think should dissolve it: For which reason perhaps *Fernelius* derives the beginning of all Stones in the Bladder, from the Kidneys; asserting that the Kernels first fall from thence thro' the *Ureters* into the Bladder, where they grow, &c. but they need not wonder hereat, if they are pleased to consider how Gravelous and also hard Stones grow in the Sea, and in Rivers, though continually wash'd with the Waters: And these are not unlike to those in Mens Bodies; and what serves demonstrably to convince us that Stones are sometimes form'd in the Bladder, and do not always proceed

CHAP. II.  ceed from Kernels first form'd in the Kidneys, is the famous Instance of a Stone taken from a Man's Bladder about five Months past, which was full of Pus or Matter, in *Loco Nuclei*, as several Physicians who saw it can affirm..

If the Reader is desirous to be inform'd, either by Microscope or Anatomy, in the Structure of the Parts we treat of, he may read *Eustachius, Malpigijs, Bellinus, Rhuyfch, &c.* who will perfectly inform him in the Niceties thereof. Having said thus much of the first Causes of the Stone, I step over to those which are more remote.

The matter of the Stone is communicated to the Mass of Blood, and very often to the Reins, by Intemperance: To wit, the inordinate use of Victuals, &c. For hereby it very often happens that

that abundance of Humours, concurring through so many Vessels, the Glandules being above measure fill'd, and the Pores, which transmit the Chyle, clos'd and obstructed, the Concoction of all is impair'd, and a sink of Corrupt and Putrifying humours is promoted, from whence comes the Original of Continual Fevers, and other Contumacious Indispositions in the *Mesentery*; as *Veslingius, Lib. 1. Cap. 4.* Witnesseth. For hereby not only a Distemperature of the whole Body, but there comes also an Evil Constitution of the Organs to it, and Matter of the Stone is produc'd, the Stomach weaken'd, and its Spirituous Fermentation extinguish'd, also Belching, Fluctuations in the Stomach, and Flatulencies are excited. Under this kind of Victuals, is comprehended



CHAP. Bread not well fermented nor bak'd  
II. with a moderate heat, very fine,  
and having too much of a clammy  
and sweetish quality; and in some  
Bodies much use of Cheese, which  
is difficultly concocted, and enter-  
ing not those fine Orifices of the La-  
ctéal Veins kindly, causes Obstructi-  
ons, thickens the Blood, and with its  
*Terreous Salt* generates the Stone.  
Herein I prescribe not any Dire-  
ctions to Persons strong in Body,  
Healthy, and accusom'd thereto,  
according to the Axiom in Phy-  
sick: *assueta licet deteriora inas-  
suetis licet melioribus præferenda sunt*;  
yet hereof a choice and moderation  
is to be regarded. Much of the  
same nature also is the too constant  
use of Beef, Pork, and Goats-flesh,  
and Meats very Salt and smoak'd,  
which carry much Nitrousfness  
with them, and are not very easily con-

concocted. To which may be added the generality of Fish wanting Scales and breeding in the Mud, such as Eels and Lampreys. And a too frequent use of Ducks, Geese, and other Water-fowl, which produce a Superfluous and Excrementitious humidity; also Fruits Earthy of taste, and unripe, are in like manner necessary to its production.

There are also divers sorts of Drinks which breed the Stone in the Reins and in the Bladder: whereof among the first we may reckon new Beer, which has too much Yest in it. Thus *Gesner* relates that Alder boil'd in a Brewer's-Fatt with their Beer, and afterwards laid for some time under Ground, and covered with Gravel, turns to a hard Stone; and therefore thick and standing Water; and that

CHAP. that melted from Ice, or tasting of  
II. the Earth it passes through, and  
carrying the strength of Minerals  
with it; as of Allum, Sulphur,  
Iron, and such like, are not to be  
us'd as common Drink: The  
drinking of cold Water after Sweat-  
ing, also is very prejudicial and  
breeds the Stone as *Celsus* ob-  
serves.

And Tartarous Wines do most  
certainly concur to the production  
hereof, and Wines sweet, new and  
not fine; of which sort are a great  
part of the *Moravian*, *Italian*, and  
*Malaga*-Wines, and in some places  
*Rhenish*, with which a Saline Tar-  
taris sointimately united and join'd,  
that it is scarcely separable, but with  
it passes through the Vessels of Man's  
Body, and sometimes sticks to the  
Reins and to the Joints, and  
breeds the Stone and Gravel;

The



The same may be said of Course CHAP.  
II.  
Wines abounding with a dreggy Tartar. Yet small Wines do rather preserve from the Stone than transmit such impurities to the Reins and Bladder.

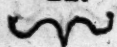
*Ova recentia, Vina rubentia pinguis  
(jura  
Cum similia pura naturæ sunt valitura.*

On this Account Dr. Philip Guide, a French Physician living in Salisbury-Court, a Member of our College, dedicated a Treatise of Red-Wine to the great Boyle (*du Vin Rouge*) which he recommends against the Stone and Gravel: White-Wine is more frequently us'd in England by those that are subject to this Distemper: *Consuetudo est altera Natura.*

Besides

CHAP.

II.



Besides Meat and Drink, there are other Non-natural things which promote the Generation of the Stone.

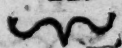
The *Air*, Thick, Troubled, Rainy and Cold, thickens the Humours, procreates Phlegm and Crudities, it partaking of a certain Saline and Terreous Consistence.

Immoderate Sleep makes the Person dull, obtunds the Heat, and creates Crudities. Too much Ease and Sloth corrupts the Blood, nourishes an impure Colluvies of Humours and exceedingly promotes it. *Obnoxii Calculo podagrici & alii quorum Renes, jecur & lumbi multo in dorsum decubitu calefcunt, & ob intermissum corporis exercitium & vigilias, coctiones probe perfici non possunt. Hildanus.*

Too much motion presently after Meat, causes a fulness in the Stomach.

Stomach and hinders Conco-  
ction.

CHAP.  
II.



And the immoderate and more  
then brutish Salaciousness, which  
some indulge themselves in, most  
certainly promotes the rise and  
growth of the Stone, heating and  
obstructing the Urinary Parts,  
&c.

Such Persons who Travel in  
Forreign Climates, or any where in  
the Winter, in deep Snow, e-  
specially with empty Stomachs,  
fall thereby into insatiate Appe-  
tites, and become obnoxious to  
Obstructions and to the Stone.

Also the Urine and Excretions  
too much retain'd, produces Noxi-  
ous Vapours, dulls the heat of the  
Body, disposes to the generation  
of the Stone, and afterwards har-  
dens it. Thus *Riverius* observes,  
That the *Spanish* Nation emit  
their



CHAP. their Urine much quicker than o-  
 II. thers, and therefore are not subject  
 to the Stone as other People.

And also the Passions of the  
 Mind, being violent and exorbi-  
 tant, do much contribute to the  
 Generation of the Stone.

|                       |     |                         |
|-----------------------|-----|-------------------------|
| <i>Gaudia pelle,</i>  | }}} | <i>Nec dolor adsit,</i> |
| <i>Pelle timorem,</i> |     | <i>Nubila mens est</i>  |
| <i>Spemq; fugato</i>  |     | <i>Vinctaq; frœnis</i>  |

*Hæc ubi regnant.*

For Sadness by degrees im-  
 pairs the Strength, cools and dries  
 the Body, hinders Digestion, causes  
 sharp Humours and increases them.  
 Anger kindles Fevers, excites Cho-  
 ler, and disturbs the Spirits.

And Fear causes an Acidity in  
 the Humours, diminishes the  
 Strength, and abates the Natural  
 heat. There

There is also an Hereditary disposition, which conveys the Stone by Succession and Inheritance, like the Gout and Consumption ; according to the Latin Verses : CHAP.  
II.

*Qui Viret in foliis venit a radicibus*

(humor,

*Sic Patram in natos veniunt cum se-*

(mine morbi.

But these do not always necessarily follow unto those Causes ; Astrologers add, a Conjunction of Saturn with Mercury in the Eighth House, under which (they say) the Child that is Born, will be troubled with the Stone.

*Andreas Argolus in Patavina Academia Matheseos & Medicinæ Professor, &c. loquitur de Calculosis & Nephriticis hunc in modum:*

*Dum*

CHAP.

II.

*Dum Ægrotus e lecto surgeret per horas 36. Urina Supprimebatur: Luna erat in quadrato Martis applicato Saturno Evasit ejectis calculis & viscositatibus, favente Jove & Mercurio. Alio in loco: Singula suas causas ex astris habuere:*

I have added this for the Reader's Curiosity, for I confess, as to my self I have little Faith in those things, and of that known *Pentameter.*

*Astra regunt homines, sed regit Astra Deus.*

I question the first part as much as I am convinc'd of the latter.

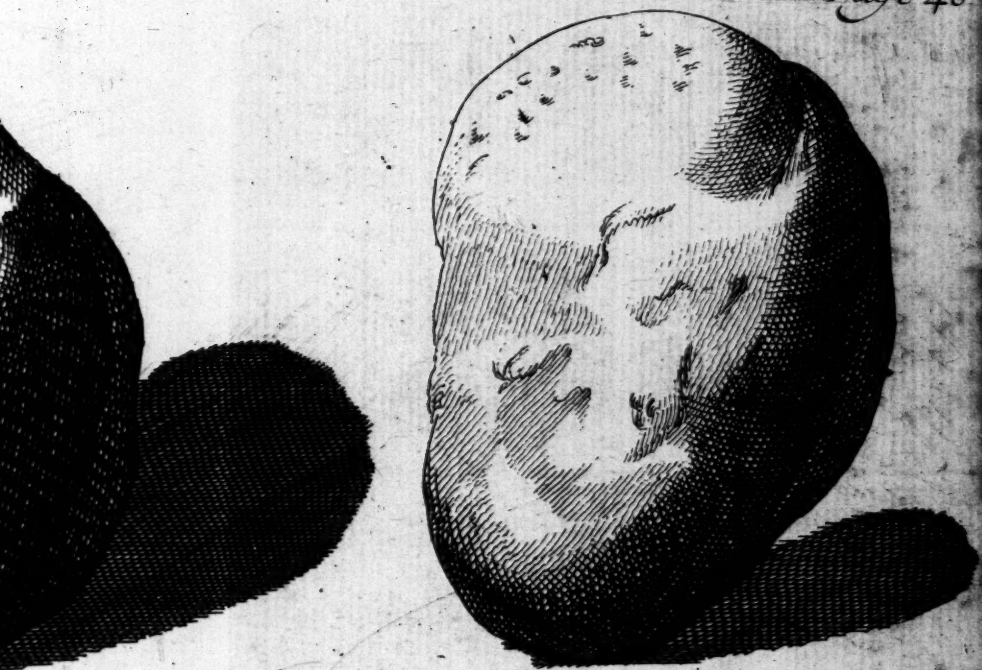
And now it will not be improper to consider the Difference of Stones.

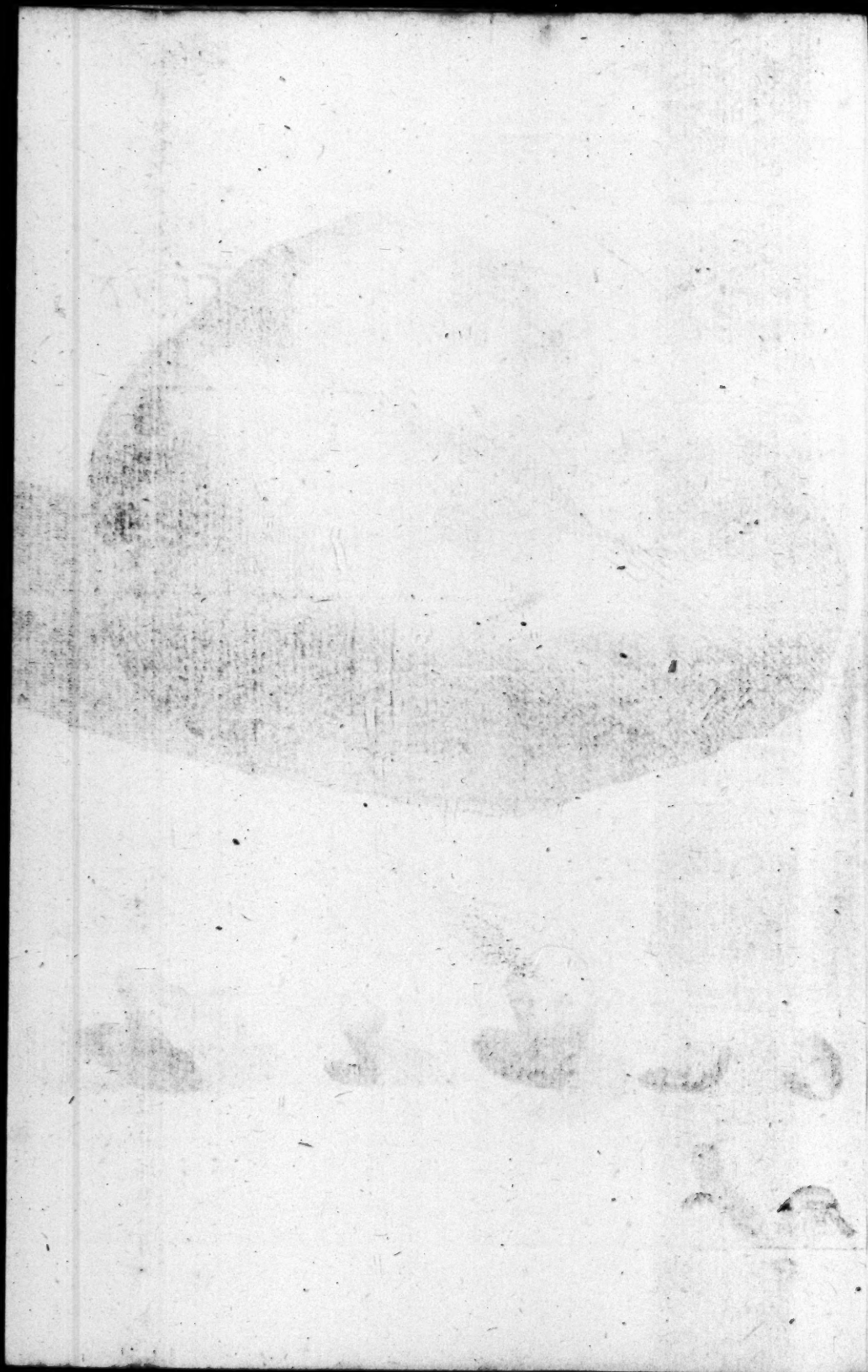
For Magnitude, they are either great or small; which see in the Figures here delineated exactly, as they grew in humane Bodies, both for form and bigness.

Za-











*Zacutus Lusitanus* relates, that an CHAP.  
II.  
Ingenious and Learned Man, being troubled Twenty Years with the Stone in his Bladder, at last had his Urine totally stop'd, and died in extreme Torture: Upon opening him, there was found in the Cavity of his Bladder, a very hard round Stone of a whitish Colour, that weigh'd 18 Ounces;

I have given (in my Book written in Latin *Anno. 1686*, call'd *Dissertatio Lithologica*) an Account of one Mr. *Lacy*, who liv'd in *St. Thomas's* in *Southwark*, and was my Patient, and whom I refus'd to Cut when he was alive, well knowing that such an Operation as it must necessarily have been, would certainly prove his Death; for the Stone when taken from him after he died, weigh'd 19 Ounces and an half;

CHAP. I felt the bulk of it, *digitum mit-*  
 II. *tendo in anum.*

Dr. *Antonius Vander-Linden*, a famous Physician, had a Stone in his possession, which being very extraordinary, he shew'd to several People; it was taken by himself out of a dead Man's Body, and weigh'd 32 Ounces, being exceeding hard, compact, Triangular, of the colour of Flint, and which with a Steel, would strike Fire like a Flint: This Stone having stop't the Patient's Urine for Eleven Years, at last the retention being total, it kill'd him.

This was the Case of an Eminent Alderman, that upwards of Threescore Years ago, was Lord Mayor of this famous City, Sir *Thomas Adams* by Name: This Gentleman was so abstemious and temperate in Drinking, that for  
 Forty

Forty or Fifty Years, even at public Feasts, he never exceeded a Pint of French Wine for his share, being always us'd to conclude with a Glass of Canary: In his ordinary way of Living, he drank constantly every Morning a large draught of Small-Beer with Sugar.

CHAP.  
II.  
~

For many Years, he felt at certain times, a Pain near the *Perineum* in making Urine, which he voided but seldom, by drops, and with Acrimony.

Some Hours before he died, he had no desire at all to make Water, and yet suffer'd no manner of Pain, by the distention of his Bladder.

At last he was very much inclin'd to Sleep, no less than if he had taken Medicines for that purpose; and thus within Four and Twenty Hours, died this Grave Senator, of admirable Patience, in



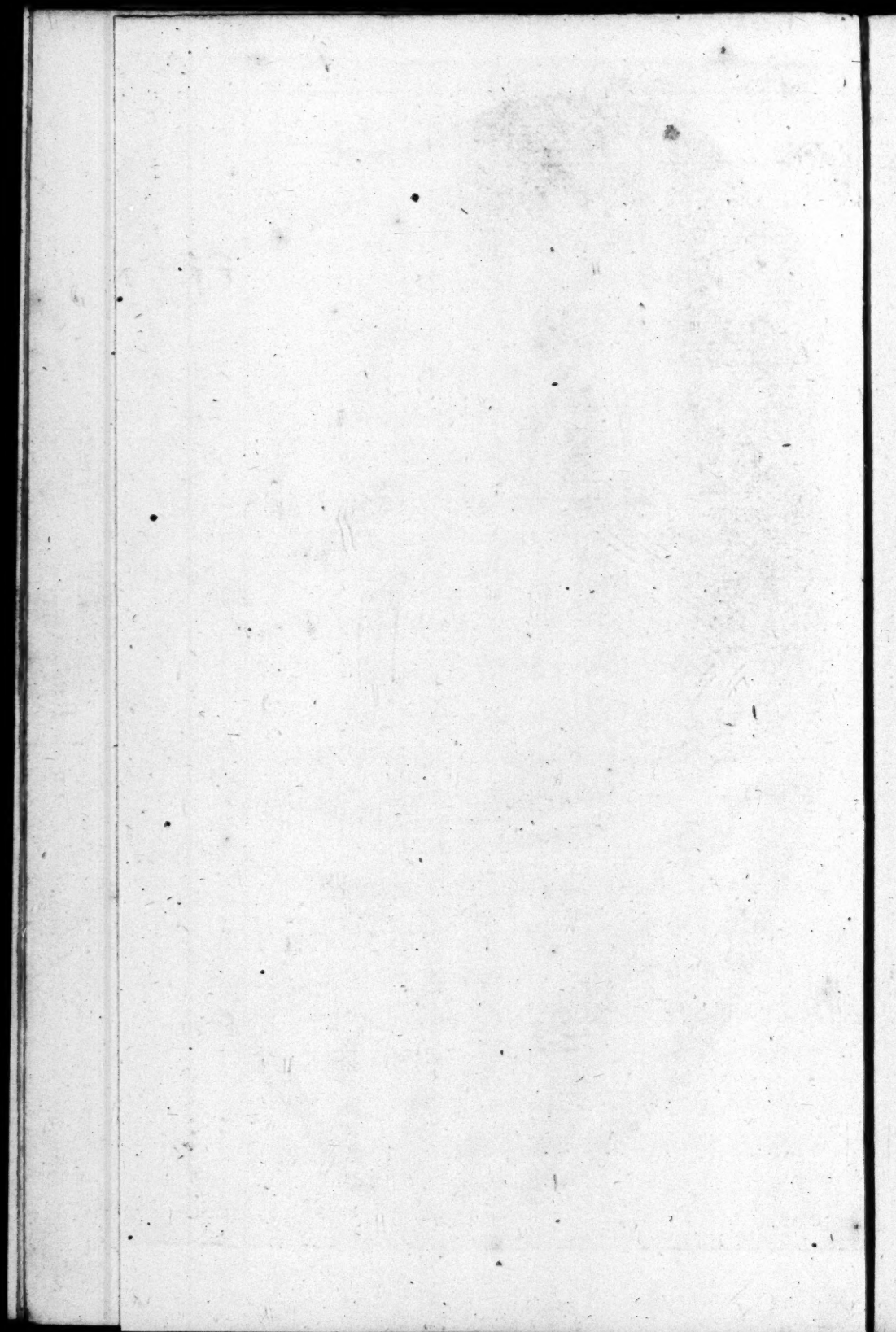
CHAP. the 82d Year of his Age, and the  
II. 1667, of the Christian *Æra*.

Being open'd by one Mr. *Hollier*, a Surgeon, of noted Experience, no Urine was found in his Bladder; but it was fill'd with a Stone of an unusual and incredible bigness, resembling the Figure of a Pear, and weighing 25 Ounces and an half.

What was most observable in this Stone, *the Figure of which here see*, was, that where the Ureters were inserted in the Bladder, the Urine had made it self a *Gutter* of a Semicircular form, and from the middle of *That*, another strait one, through which it fell into the *Urethra*.

The relation of this wonderful Stone, now kept in the University of *Oxford*, and the account of the Patient out of whose Bladder it was taken







taken, I had from the Mouth of Sir CHAP. II.  
*William Adams*, the Alderman's own  
 Son, who formerly, when I Printed  
 my *Latin Treatise* of the Stone, gave  
 me leave to insert it in my Book.

For *Colour*, some Stones are Red,  
 Yellow, Ash-Colour, Black, &c.

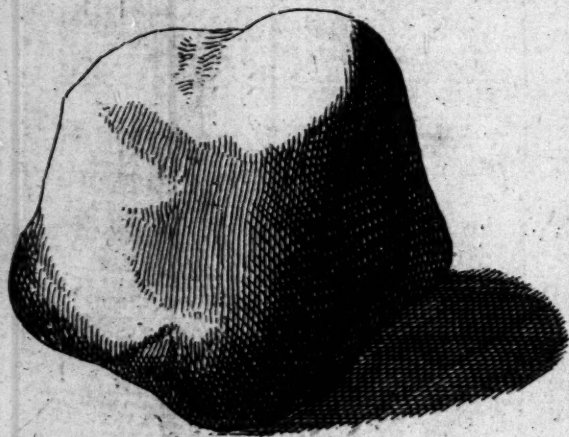
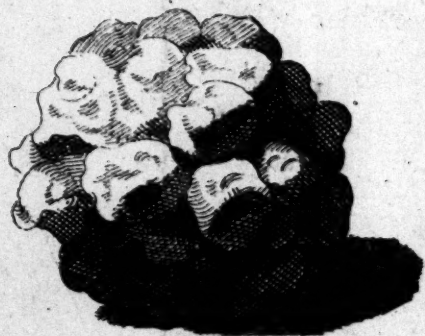
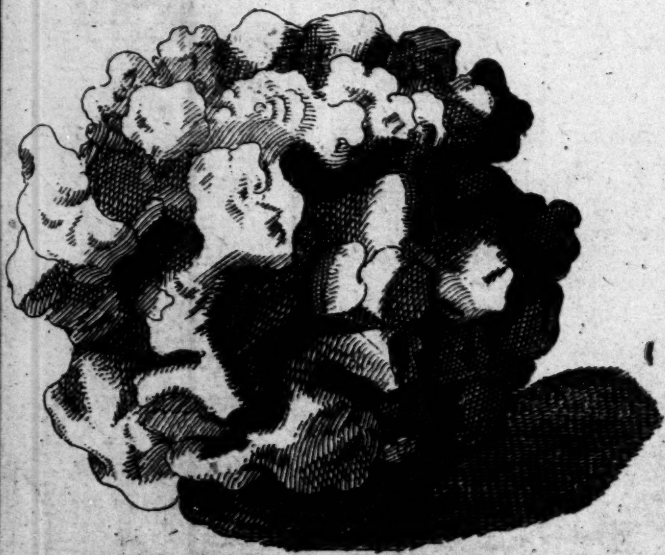
A certain Woman, says *Zacutus  
 Lusitanus*, was for Seven Days to-  
 gether, tormented with a cruel  
 Pain in her Groin; at last by the  
 use of some Medicaments I gave  
 her, she voided a very hard, big,  
 and round Stone, like a Hazel-  
 Nut, of an exceeding black colour,  
 resembling Jet.

Such a black Stone (but as big as an  
 Hen's Egg) I my self saw, having  
 caus'd it to be taken out of the Dead  
 Body of one *Mr. Collins*, a Strong-  
 water-Man, or Distiller, in *Wapping*,  
 near *Execution-Dock*, about 25 Years  
 ago, whose Father had been Master

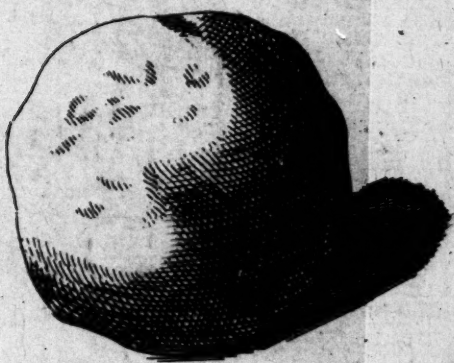
CHAP. of the Honourable Company of  
II. Surgeons in London.

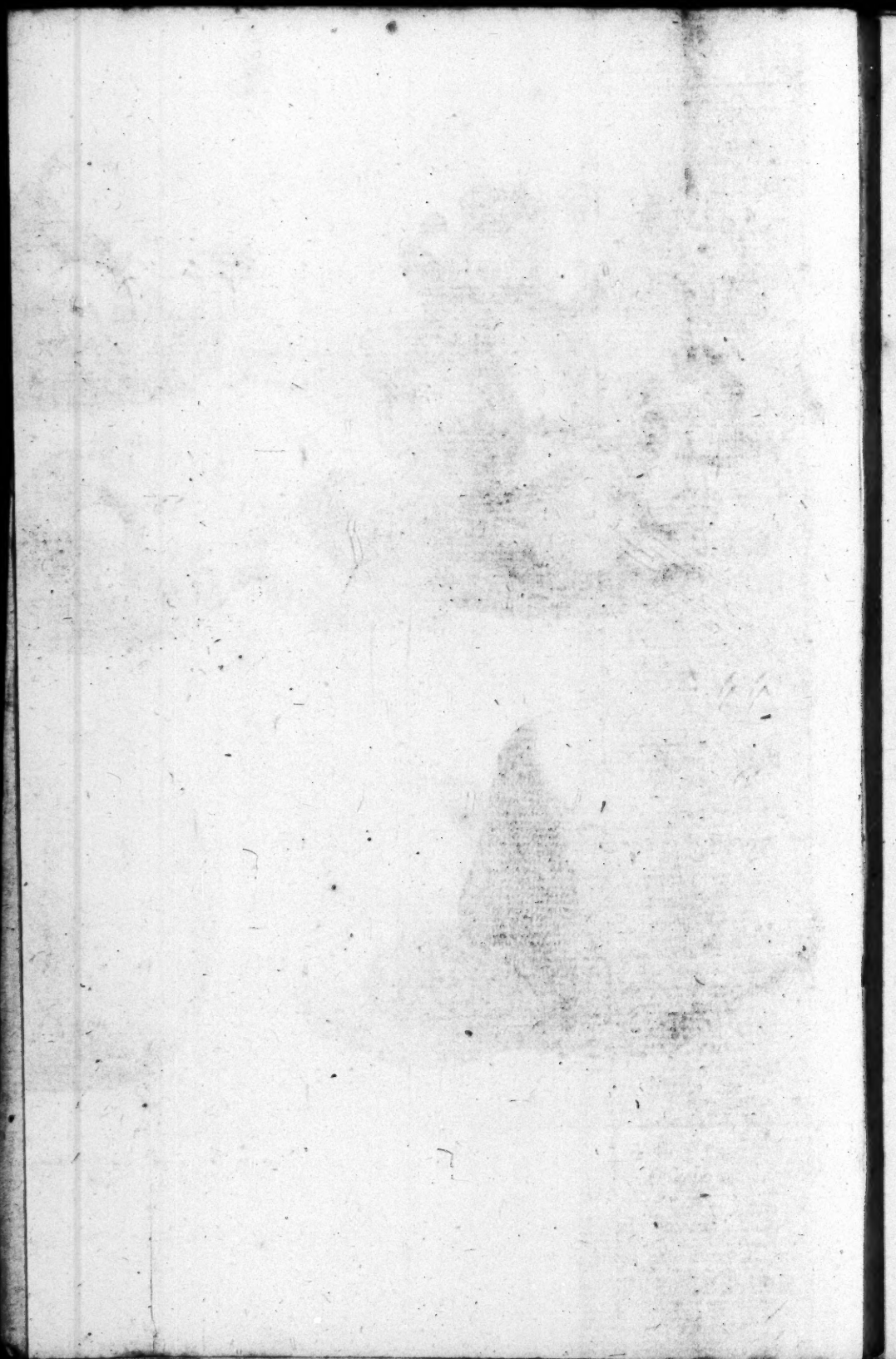
For *Figure*, they are Round, Oval, Long, Corner'd, and of other various Shapes, with their Surfaces, Rough or Smooth, as here shewn.

But of all the Wond'rous Figures of Stones taken from Humane Bodies, that ever I heard of, (before what I my self saw, of which afterwards) the strangest is that describ'd by Dr. *Acosta*, a *Portugal* Physician; the Relation is this: A Boy 15 Years of Age, was long Sick of a Cruel and most Miserable Torment in his Bladder, which tho' his Body was otherwise in a good state of Health, kill'd him. His dead Body being open'd there was found in his Bladder, a round Stone, as big as a small Hand-ball, arm'd on all sides with  
polish'd







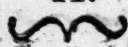


polish'd and sharp Pyramids, like what is Painted for the *Sun*, and the humour by the baking heat of the Body, was so dispos'd and hard'ned, that between Pyramid and Pyramid, long Spears like Needles, were by Nature inserted, as the Figure, which is exactly shewn in his Book, do's manifest. But as I hinted above, I saw almost such alike surprising and much bigger Stone, which in the Year 1688, was taken out of the Dead Body of Mr. *Samuel Leak*, a Fishmonger, who kept his Shop in *Swithin's-Alley*, against the *Kings-Head-Tavern* near the *Royal-Exchange*, *London*; he was Forty Years of Age when he died, sometime before which, his Countenance was Wild, his Eyes fix'd, and his Misery so excessive and intollerable, that it mov'd every one that came near him



CHAP.

II.



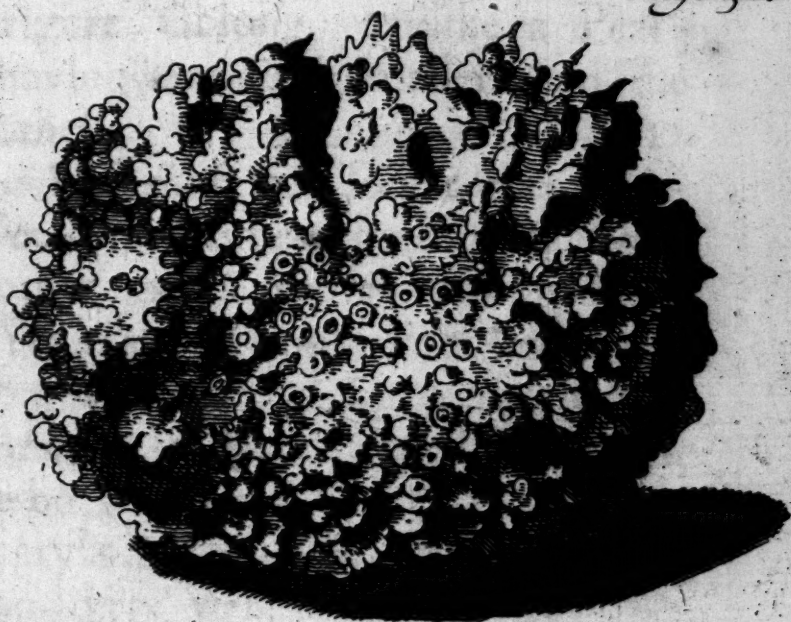
with the greatest Compassion. Any Person may easily imagin, by the bigness of the Stone, and its rough and sharp pointed Superficies, under what dreadful Misery, the poor Patient languish'd when alive ; the Stone it self, may now be seen at Mr. *Kelton's*, a Barber, against the *Salutation-Tavern*, in *Exchange-Alley*, who willingly admitted me to have the exact Figure, for size and form delineated, which here see.

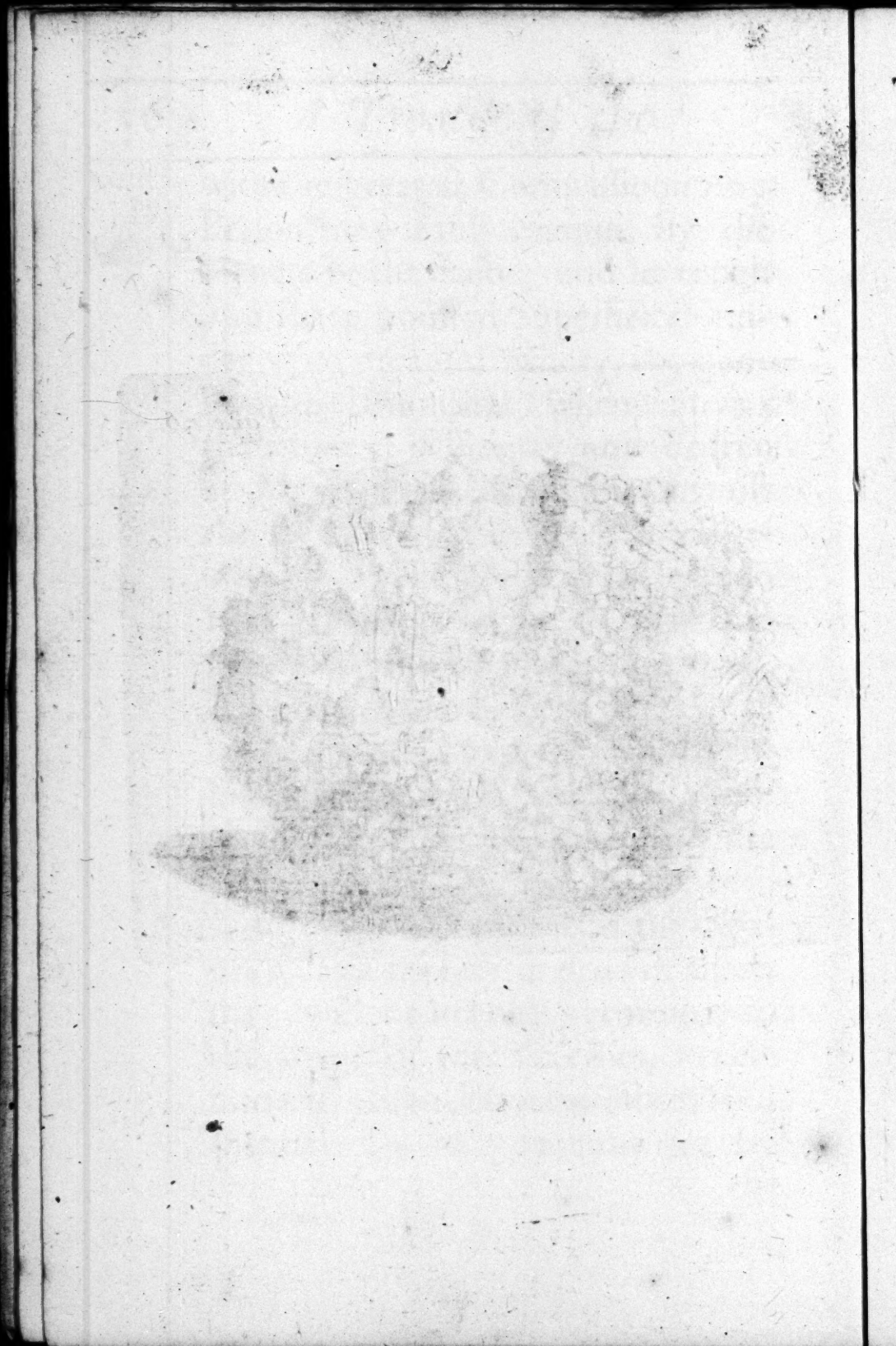
For *weight*, some Stones are light, some heavy ; those that are full of humidity are light, those which are closely compacted and hard, are heavy.

If Stones be form'd in the Kidneys, and take their growth there, they will be form'd according to the shape of the Cavities, where into their Branches naturally extend themselves ; as you may see by the

the

*Page 56.*







the Figures of the two Stones taken from Mrs. Gripp: Page 33 afore-  
going. CHAP. II.

Hence it follows, that a Stone form'd and augmented in the Neck of the Bladder, will have a Figure Oblong, or like a Pear; having one End smaller than the other :

We must not forget the Number ; sometimes there is but One, other times more ; about Nine Years ago, I took Four Stones as big as Pidgeons Eggs, from Mr. March, a Barber, aged 67 Years, who is now living at an Apothecary's in Cecil-street, in the Strand, and very well.

Some Years since (which was very extraordinary indeed) I extracted 42 Stones from the Bladder of one Mr. Whitaker, who was then about 60 Years of Age; which Stones  
fill'd

CHAP. fill'd a Quart-Pot. The Worthy

II. Dr. *Richard Lower* deceas'd, was  
present at the Operation.

If in Lithotomy we find a smooth and flattish Stone, we must judge in the Operation, that there is another or more behind.

The smoothest Stones are not extracted without some Pain, and sometimes are not rightly laid hold of by the Forceps.

There are other differences of the Stone, according to its degrees, wherein it is either *Sand*, which takes its beginning in the Pores of the Kidneys, and differs from the Stone only in its magnitude; or else it is *Gravel*, which with mucous Matter intermix'd with the Sand, is therewith Coagulated,

*Arenula*

*Arenulae mutuo adhaesu inter se colligatae, calculum coagulant atq; Com-* CHAP. II.  
*ponunt.* Fernelius.

And these are the *Rudiments* and *Original* of the Stone.

There are also Stones that are *Tophous*, which have the Figure indeed of Stones, but are frangible or brittle, and suddenly Break or Crumble to small pieces.

And there are Stones exceeding hard, solid, and not easily broken.

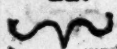
Some Stones grow about *Extraneous Matter* they find in the Body, of which we have several Examples.

*John Matthæus* relates, that a small Nail was swallow'd by one at unawares, and was a long time after, taken out of the Bladder, with a Stone Cut out at the same time; the Stone cleaving round about the Nail, as if the latter had been



CHAP.

II.




been the Ground-work of the former.

Like unto this, is the Wonderful relation which *Ambrose Parey* gives, *Lib. 25. Cap. XIX.* In the Year 1566. says he, the two Sons of *Laurence Collot*, Men Excellent in Cutting for the Stone, took from a Man, a Stone of the bigness of a Walnut, in the midst of which was a Needle, just like those that Shoe-makers use: The Patient's Name was *Peter Cocquin*, dwelling in the Street *Galand*, at the place call'd *Maubert* at *Paris*, and I think (says *Parey*) he is yet living; the Stone was shew'd to King *Charles the Ninth of France*, for the Monst'rousness of the thing, I being then present; which, being given me by the Surgeon, I preserve among other Rarities.

And

And to my own knowledge, in the Year 1691. Mr. *English*, an Ingenious Surgeon, (then living on *London-Bridge*, but since dead) in the presence of Dr. *Hobbs*, took away a Stone from one *Mary Tovey*, a Virgin about 26 Years of Age, who some Years before, with her Bodkin, us'd to ease her self of an Itching Pain, which she had in making Urine, by putting up the Bodkin in *Meatu urinario*, but at last let it pass so far, that it slid into the Cavity of her Bladder, where it lodged for about two Years, and was drawn from her, with a Stone as big as a large Walnut grown about it, one part of the Bodkin stuck out at the top, and the other at the bottom of the Stone, which was of an Oval Figure, as here delineated. I my self saw the

CHAP. II.  


Stone,

CHAP. Stone, the extracting of which  
 III. kill'd her.

A, *The Eye of the Bodkin.*

B, *The Stone.*

C, *The Crooked part of the Bodkin, which was bent by the Forceps in Extracting the Stone.*

### CH A P. III.

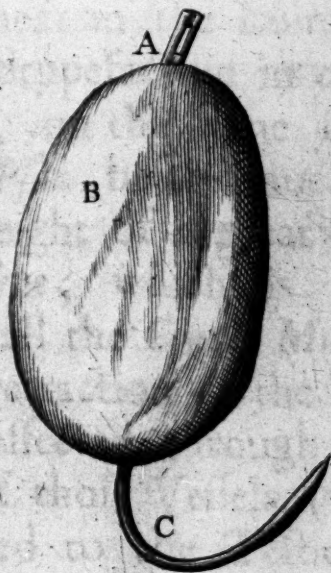
*Of the Diagnostick Signs of the Stone.*

**T**HE Pathological Signs of the Stone in the Kidneys, tho' properly there be none, but what are Equivocal and Common with other Diseases, yet for the most part do indicate it.

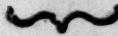
1. A fix'd Pain in the region of the Loins, continuing, heavy, lying like a weight in the substance of



Page 62.





of the Kidneys, and with a dull CHAP. III.  
kind of Sense; but when it is in   
the head of the *Ureter*, it is sharp,  
tearing, and of all Pain most tor-  
menting.

2. A difficulty of bending the  
Back, the Nerves thereof being  
stretched and press'd together.

3. A heat in the Loins.

4. A Stupefaction in the Thigh  
and Leg, on the same side; the  
Muscle *Psoa* being much press'd  
by the weight of a great Stone, or  
that Nerve, which is branched  
through all the *Crural Muscles*.

5. A retraction of the *Testicle* on  
the side affected, through the draw-  
ing up of those Vessels, (which are  
divaricated to the Testicles from  
the Reins) with the Stomach;  
which is occasioned not so much  
through means of the *Peritoneum*,  
whose Membrane each participates  
of;



CHAP. of ; as by reason of that common  
III. *Nerve* inserted into the proper and  
internal *Tunicle*, from the *Stomachic*  
*branch* of the *Sixth pair*.

6. The Urine is many times Bloody, which is occasion'd especially by a sharp Stone, that either erodes the Parts, or tears and opens the small Veins, which are spread through the substance of the Kidneys.

And it is to be observ'd that sometimes in the beginning of the Disease, the Urine is thin and limpid like Common-water, and but very little in quantity, because the Kidneys are obstructed and partly stopt up with Stones. But when they are passed through the *Ureters* into the Bladder, the Urine is render'd thick, turbid and mostly plentiful.

*Calculus*

*Calculus e renis substantia exturbatur in cavum, quumq; Evellitur, renis Partem cui adhærescebat, sine doloris sensu divellens & quasi dilacerans, sanguinem prolicui, quæ pariter cum Urina profunditur, eamq; crassam, turbidam, subnigramq; reddit. Fernel. Pathol. lib. vi. cap. xii.*

What *Hippocrates* rightly observes, that the similitude of Diseases, often imposes on good Physicians, and creates Errors and difficulties, is no where more true, then in Nephritic and Cholic Pains; for not only audacious Emperics, but the most rational Physicians have often mistaken the one for the other.

*Galen*, who was so wonderfully vers'd in the Diagnostic signs of Diseases, has err'd in this point, as

F

he

CHAP. he Ingenuously confesses himself,  
III. in 2. de loc. affect. cap. 5. wherefore  
I shall here set down, the principal  
signs, by which they may be distinguish'd.

If the pain be above the *Reins*, it proceeds from the *Gutts*, not from the *Reins*.

If it be from the *Reins*, it tends outward, but removes not from the same place, only when the Stone falls from its first Station into the *Ureter*.

But the *Cholic* Pain wanders, changes its place, and takes its progress through the whole circuit of the *Guts*.

Tho' in the Stone, there is a Vomiting and *Nausea*, as well as in the *Cholic*, yet it is seldom so violent in the first, as it is in the latter.

*Nausea*



*Nausea inquit Galenus & vomitus*

(urgent

*Multo graviore & magis assidue*

(dolente Colo.

The Nephritic Pains, are likewise distinguish'd from those of the Cholick, by the Red-Sand and Gravel that is commonly voided with the Urine of the first; tho' Avicenna is of Opinion, that the Gravelly-Sand in the Urine is so far from being a sign of the Stone in the Kidneys, that it keeps 'em more free from it, because it is a sign, that those Kidneys have the strength to expel what is retain'd in others, that are weaker, and might soon turn to a Stone: But I am of the Learn'd Charleton's Opinion, and considering how soon the least thing, that remains near the Kidneys, may turn

CHAP. to a Stone, I would rather Piss  
III. clear, then seeing my Urine full of  
Sand, be always beholden to the  
strength of the *Facultas Expultrix*.

Another sign peculiar to the  
Stone, is bloody Urine, which is  
never seen in the *Colic*.

In the *Stone* of the Kidneys, there  
is also most commonly, an obtuse  
Pain, as if some weight lay near  
the place affected, hind'ring the  
*Spine* of the Back, from bending  
backward or forward, without  
much uneasiness.

Those who are troubled with  
the *Stone* or *Gravel*, are better after  
their Meals; but with the *Colic* worse.

What an absolute necessity there-  
fore is there, for a Physician to be well  
skill'd in these distinctions? as you  
may also see, by what that great  
Man Dr. Charleton says, in his  
Book *Diatrib de Lithias*. Sect. 2.

where

where speaking of these two Di-  
stempers, says he, *Et licet in primo* CHAP.  
*paroxysmi insultu, ubi dolori supra* III.  
*modum savienti potissimum obvertenda*  
*est Medicina, Colicam inter & nephri-*  
*tim satis conveniat de auxilio; ita ut*  
*quæ huic prodesse, illi etiam opitulari*  
*queant præsidia: tamen temporis pro-*  
*gressu, & invalescente morbo Contrariæ*  
*& e diametro pugnaces emergunt in-*  
*dicationes, remediaq; postulantur plane*  
*diversa, & facultatibus adeo odiosa dis-*  
*sentia, ut qui antinephriticis colicam,*  
*aut e contra nephritim anticolicis expug-*  
*nare tentaverit, inscianter excusationis*  
*Parum, quo ab homicidii reatu Vindi-*  
*cetur, nisi stolidam suam Ignorantiam,*  
*babuerit sibi relictum.*

The Sense of which may be  
shortly render'd thus:

That if a Physician, in the be-  
ginning of a Paroxysm, should hap-

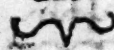
F 3

pen



CHAP.

III.



pen to mistake, and give his Patient an *Anticolic* instead of an *Antinephritic* Medicine, or *e contra*, he may possibly do no hurt; but if he goes on in his mistake, and the Disease at the same time increases, the indications are so clashing together, and the Remedies requir'd, of such very different Qualities, that he who foolishly attempts, to overcome the Stone with *Anticolics*, or the Colic with *Antinephritics*, has besides his stupid Ignorance, but little left to absolve him from Manslaughter.

CHAP.


## C H A P. IV.

*Of the Diagnostic Signs of the Stone  
in the Bladder.*

**T**HE Prince of Physicians,  
*Hippocrates Lib. iv. de morb.*  
computes the Signs of the Stone  
in the Bladder, very compendiously  
in this manner.

In making their Urine, it Pains,  
and comes by little and little, as in  
the Strangury; is somewhat Bloody,  
as if the Bladder were ulcerated,  
and the Bladder is hot and inflam'd,  
the upper part of the *Præputium*  
plainly shewing it: It is also a  
sign of the Stone (some of the  
other signs being also present) when  
*Sand* is voided, tho' not always,  
for

CHAP.  
IV.

 Arenas multi mingunt, neq; Calculosi sunt. Quoniam illæ non Coguntur in lapidem, nisi viscido aliquo & crudo humore superveniente, ad quod itidem & tempore opus est.

Hollerius.

And *Hippocr.* says, That Children rub and pull the Parts wherein they are pain'd.

To these signs, we may add the stretching of the *Virile Part*.

And a Sense of an heaviness in the *Perineum* and the whole region of the Groin, especially when the Stone is large.

Also a continual desire of making Urine, which when done, there ensues a violent Pain, chiefly in the *Glans*: Occasion'd for the most part from the Stone, falling into the *Urethra*,




Urethra, and moving with the Wa-  
ter excreted.

CHAP.  
IV.

There is also an endeavour  
sometimes, of both *Egestions* at once,  
and very frequently a *Prolapsus*  
*Ani*, which proceeds from the con-  
sent of both *Sphincters*, and the  
Community and Colligation of  
the *Nerves*, which they both re-  
ceive from one branch.

But it is known certainly, by  
manual Examination, with the Finger  
or Catheter, whether there be a  
Stone or not, and whether more  
than One, also whether large or  
small.

Whether it be hard or soft, is  
not easily known, if we could  
come to a certainty in that, it  
would be of great moment, for  
tho' it be seldom, yet it is some-  
times found, that the Stone in *Li-  
thotomy* presents hard, and in ex-  
tracting

CHAP. IV. tracting of it, breaks to pieces ;  
(the *Meditullium* of the Stone being soft, and the *Cortex* round about it, hard) but more of that in another place, where we shall treat of the act of *Lithotomy* it self.

Hitherto also relates the knowledge of the Causes *Antecedent*, of the *Temperament* and *Constitution* of the Patients, of the *Diet* which they have us'd, and the *Symptoms* which they have undergone.

For the Pain must needs be grievous, if the Stone is large, hard and rough.

The Patient that has a Stone stopping the Passage of Urine, will cross his Leggs, and hastily and with violence turn himself, or sit on the Edge of his Seat, rubbing and pulling the *Virga*, to change the Situation of the Stone, and to facilitate the Excretion of Urine,  
by

by which signs, we first suppose, CHAP.  
IV.  
Young Children to be afflicted with the Stone, which induces us to search them, to be ascertain'd of it.

I never found a Stone skinn'd over with a *peculiar Membrane*, but what was form'd between the *Duplicature* of the *Membranes* of the *Bladder*, part of it hanging in the *Cavity* of the *Bladder*, as an *Acorn* hangs in its *Cup*.

There may be an *Excrecence* of *Flesh*, in the *Bladder*, as one of the *Worshipful Sheriffs* of *London* had in my time, and died of it, as was found when he was open'd.

And sometimes we find a *Fungus*, which is not easily discern'd from a *Stone* by the *Symptoms*, because they are so much alike: But the *Stone* is much more frequent there, and an *Ingenious Man* can't be



CHAP. V. be well mistaken, provided he be attentive in sounding and searching; These are the *Diagnostic* signs of the Stone in the Bladder, to the *Prognostics*, we now proceed.

## CHAP. V.

### *Of the Prognostic Signs of the Stone.*

THAT Children are more obnoxious to the Stone in the Bladder, and ancient People to That of the Kidneys, is the Prognostic of *Hippocrates*; and also that Diseases of the Reins, and of the Bladder are more difficult to Cure in Ancient Persons, than in Young ones.

Et

*Et in Infantibus inordinatus victus  
crassos crudos & indigestos humores Cu-  
mulat, & phlegma quod cum Urina  
ad Vesicam deducitur, precipue cum  
parum exercentur, & meatus habent U-  
rinariorum angustos, & debilem facultatem  
expultricem.*

An Hereditary disposition to the Stone, descending from the Parent to the Child, oft Scorns and Eludes even the best means of Physic, administered for its Cure or Prevention:

In the Year 1691. May the 20th, I took away, by Cutting, a Stone from the Son of Mr. S----y in Barnaby-street; And on the 14th of June following, I drew a Stone from his Wife, which is now 18 Years ago, the Son and Mother are both alive at this very time.

But

CHAP.

V.

But (*ad rem*) in respect of Medicines, the Stone in the Bladder is harder to be Cur'd, than That in the Reins, but by *Lithotomy* it is easier effected.

Those who are commonly *Laxative* or Loose in their Bodies, are seldom troubled with the Stone in the *Kidneys*.

The Stone in the *Kidneys*, and with it an *Ulcer*, is desperate: Yet in this deplorable Exigence, Nature sometimes to admiration has wrought a Cure, for the Pains tending outward, to the *Spinal Muscles*, and an *Impostumation* arising, Stones have been cast forth, and the Ulcer consolidated.

*Delechampus* relates, that he saw a Man, who by an Abscess of the Loins, that turn'd to a *Fistula*, voided many Stones out of his *Kidneys*, and yet notwithstanding could



could endure to Ride, both in a CHAP.  
Coach and on Horseback. V.

I had once a Case, where an Ulcerated Matter had made a Pappy Collection in the Back of a Woman, who came from *Ipswich*, which was open'd with good success, cleans'd and heal'd; she is still alive, tho' the Cure was done by me 20 Years ago; but she has had never a Child since, and I impute the Cause to that Illness.

The Stone is a Disease, violent and dangerous, attended with *Inflammations, Ulcers, dreadful Pains, Restlessness, Obstructions of Urine, Fevers,* and other lamentable Symptoms.

But if the Stone be large and hard, there follows a necessity, that the Person (to be freed from continual Languishing Misery, worse than Death it self) submit  
to

CHAP. to Chirurgical Operation, though  
 V. there is also danger in it.

*Lapis vesicae a sola Manuali Ope-*  
*(ratione)*  
*Sanatur. Galen. Com v. vi. Epidem.*

If the Stone be not very large (which may perfectly and easily be known) the Patient under no ill habit of Body, nor an hereditary disposition to the Stone, we may then reasonably make a good *Prognostic*, but an Evil one, if there be the contrary.

If the Stone be very great, as was That, weighing 19 Ounces and an half: That, of Sir Thomas Adams, of 25 and an half: And That of 32 Ounces; (which I mention'd before) such, are to be esteem'd desperate Cases, and *Lithotomy* is not (according to *Corn. Celsus*) to be undertaken.

Yet

Yet some large Stones have been CHAP. V.  
 taken from *Patients* with success; witness That which *Parey* makes  
 mention of in his Book of *Mon-*  
*sters*: In the Year 1570, says he,  
 the *Dutchess* of *Ferrara* at *Paris*  
 sent for *John Collot*, to take a Stone  
 out of a Confectioner. This Stone,  
 tho' it weigh'd Nine Ounces,  
 and was as big as one's Fist, yet it  
 was happily taken out, the Patient  
 recovering; *Francis Rouffet*, and  
*Joseph Javelle*, the *Dutchess's* Phy-  
 sicians being present; yet not long  
 after, this Confectioner died by the  
 stoppage of his Water, by reason  
 of two other little Stones, which  
 in the descending from the Kid-  
 neys to the Bladder, stop'd in the  
 middle of the *Ureters*, and caus'd  
 his Death.

And when a Stone grows to the  
 Membrane of the Bladder, inclos'd

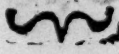


CHAP. in another Vesicle or Bladder, or  
V. without it; the Person is in the  
same predicament, as also infirm  
Persons, and weak Children.

*In nobilli quodam, cui vivo calculus  
deprehendi non potuit, post obitum Cal-  
culi Ingentes, sacculo vesicæ adnato in-  
clusi reperti sunt, qui si extracti fuissent,  
exinde misere occubisset.*

Hildan. cap. 8. Bauhin. Theatr. A-  
natom. cap. 31.

But if the Person be of Strength  
and of good Constitution of Body,  
and the Stone be not excessive large,  
tho' there be more of them,  
(the Divine assistance implor'd) the  
Operation may with good courage  
be undertaken, and with good  
hopes of success accomplish'd.

In the Female Sex, the Opera-<sup>CHAP.</sup>  
tion may much more securely and <sup>VI.</sup>  
easily be perform'd. 

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## CHAP. VI.

*Of what is to be observ'd by the Lithotomist before the Operation.*

**H**ippocrates (though he himself never Cut for the Stone) has instructed us, how necessary it is to observe all circumspection in performing it well; wherefore when a *Lithotomist* pretends to cutting for the Stone, he ought to be as followeth:

*Sis doctus, diligens, hilaris, gravis,  
Introitus tuus, figura, vestitus, ton-*  
*(sura,*

CHAP.  
VI.*Ungues, odores agro grata sint, decet.*

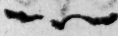
His Patient is his subject matter, he must take care to foresee the Consequences, that he may guard himself with necessary Remedies, Instruments and Assistants.

It is one of his chiefest qualities to have great skill in *Anatomy*, that he may know the Structure and Situation of Parts, that so he may Operate with necessary Circumspection, being bold but yet not rash. See *Veslingius's* Preamble to his *Anatomy*. He ought to let his Prudence appear by making his *Prognostic*, distinguishing between Things and Things, as I have particularly mention'd in the preceeding Chapter.

Whereby according to the Rule of his Art, he may succeed.

He



He is to consider the State, CHAP. VI.  
Strength and Age of his Patient. 

He ought to be inform'd from the Patient's own Mouth, and by those that wait on him, of the secret Matters and Distempers to which he is subject, of the excesses that may have contributed to his Indisposition; nothing is to be conceal'd from him, because of the Remedies and Instruments which he is to chuse.

It is a good presage for the Cure, if after the Operation is perform'd, the Patient Sleep, if his *Respiration* is equal, his Tongue Moist, and he neither Vomits or is Drouthy; the lower Region of the Belly little, or not at all swell'd, and there is only a moderate heat and a slight Feaver; because in that Indisposition the Inflammation

CHAP. ceases most commonly about the  
VI. Fifth or Seventh Day.

He ought to know that the Patient oftner Dies by Accidents that accompany or follow the *Operation* than by the Stone, whilst it is in the Bladder, tho' the Torture many endure with it, is ten times more grievous than *Cutting*, or even Death it self.

If the Patient be too weak, he ought to have time to gather Strength; The *Operation* will always bring danger, and the *Lithotomist* ought to give notice of it, that he may avoid blame.

Two Hours should be allow'd before the *Operation*, for Digestion of the Food that the Patient has taken: That Morning, I commonly allow a good Glas of Claret and Sugar with a Toast, that  
the

the Patient's Body may be in a better condition to endure the *Operation*. CHAP.  
VI.

*Cornelius Celsus* observes that most Learn'd Men have weak Stomachs and are not Strong, by reason of watchings and over-studying.

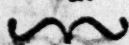
*Pharmacy* or *Medicine* (of which I shall treat more at large, after I have done with the *Chirurgical* part) cannot cure a Person afflicted with a large, hard, concreted Stone; it can only bring relief when Stones are small, either in Kidneys or Bladder, and of a loose Cohesion, which then may easily be resolv'd and Evacuated by Urine.

Further, the *Lithotomist* must enquire how long the Patient has been griev'd, he must consider the Season of the Year, the Place and other Circumstances according to the Principles of *Physic* and *Chirurgery*.



CHAP.

VI.



If the Patient has the *Jaundice* or *Dropsie*, or both; or an *Ulcer* in either *Kidney* or *Bladder*, or be *Asthmatic*, *Gouty*, or has a *Stone* adhering to the *Bladder* (which is but seldom, and then not always discernable) or has a *Fungus*, or *Sarcoma*; with such he must not meddle, otherwise than to palliate the Case as much as he can, but not make use of *Lithotomy*; that is, he must not Cut such a Patient, for he will have no credit by so doing in the end.

Children are more soon and easier cur'd by this *Operation*, than those that are stricken in Years, their Mind being sedate, not knowing or reflecting on the Danger of Death.

Whilst all things are preparing, it is the *Lithotomist's* part to comfort the Patient: The only and true

true comfort in trouble is that CHAP.  
VII.  
which Religion supplies us with, wherefore let the Patient pour out his request to the Divine Being for Relief and Deliverance, &c.

## CHAP. VII.

*Of the method of Searching.*

Children are search'd *Digito in anum Immisso*, but if the Patient be a Woman; search *resupinata jaceat in lecto, genubus apertis, & nymphis deductis, dextra manu immittatur Catheter (hunc in usum fabricatus) in meatum Urinarium, & sic leniter (sursum, deorsum, dextrorsum, levorsum) inquiratur an sit calculus in vesica, unus vel plures vel nullus, that is, you may enquire, and search accord-*

CHAP. according to Art, whether there be  
VII. one or more Stones, or none at  
all.

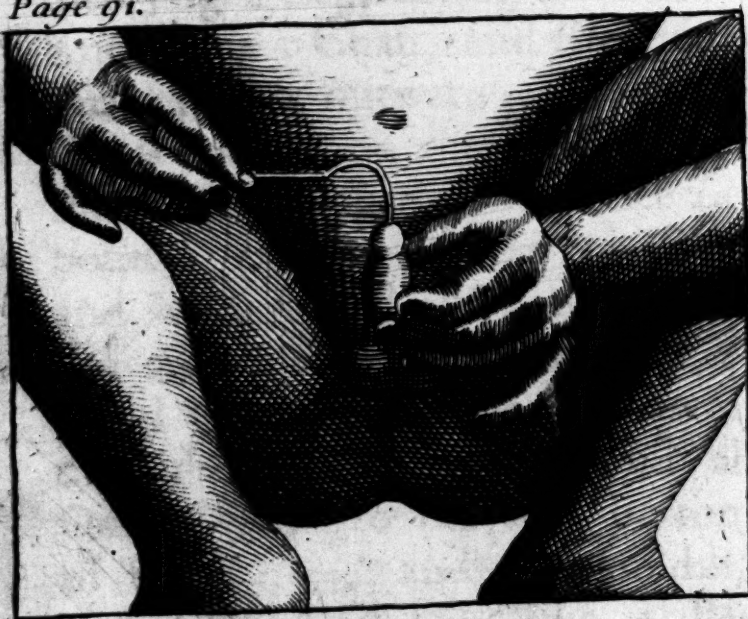
For the more easie searching of Men, they may stand upright upon their Right Leg, laying their Left Knee upon a Chair, and stretching their Bellies outward; otherwise, They may lie on their Backs with their Thighs open; when the *Lithotomist* raising the *Penis* or *Virga*, and holding it strait between the first and middle Finger of his Left Hand (*Denudata Glante*) must with the other Hand, gently thrust an Oiled *Catheter* to the very bottom of the *Urethra*, and then holding it by the strait end, like a Pen (the first and middle Finger touching the *Catheter* on one side, and the Thumb, answering exactly to the space between the two Fingers on the other side) his Hand being half open,



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Page 91.



open, he must turn it towards the *Pubes*, which will bring the Bill of the *Catheter* towards the *Anus*; then must the *Catheter* and *Yard* be mov'd together, towards the *Groin* that is remotest from the *Lithotomist*; who at the same time, turning the *Catheter* between his Fingers, that the Bill of it may come towards the *Pubes*, must Press the *Catheter* a little more with his first Finger, (which is highest) than with the other, that the Center of motion may be upon the Thumb, by which means, the handle of the *Catheter* will be cover'd, and the Bill or bending of it rais'd, so as to press the *Sphincter* and enter into the Bladder: See here the Figure.

Whilst the *Lithotomist* turns the *Catheter* towards the *Pubes*, he must pull the *Penis* a little up, with the Fingers of his Left-hand, that the  
*Urethra*



CHAP. VII. *Urethra* may be extended and free from Wrinkles ; because it being a Membraneous Part, the Plicatures thereof, may hinder the Catheter from slipping down.

Sometimes when the Catheter is introduc'd to the very bottom of the *Urethra*, and when the Bill of it is turn'd towards the *Pubes*, the *Lithotomist* is oblig'd to let go the *Penis*, and to put one Finger of his Left-hand into the *Anus*, and by slight compression of the *Rectum* and the *Urethra*, the Catheter is easily conducted into the Bladder, which being done, he is to draw out his Finger, and hold the *Penis* no longer.

The Wire or *Stillet*, must be taken out of the Catheter, before it be introduc'd, and when it is in the Bladder, it is held by the Rings betwixt the first and middle Fingers, stop-

stopping the hollow of the *Catheter*, CHAP.  
VII.  
with the Thumb, and turning the  
back of the Hand towards the Pa-  
tients Belly: Then the *Lithotomist*  
is to give some easie jogs, moving  
the Bill of it a little to the Right and  
Left, without turning the *Catheter*  
fully round.

The Rings, or strait end of the  
*Catheter* must also be mov'd down-  
wards, that the bending may mount  
towards the bottom of the Bladder,  
and sometimes they must be in-  
clin'd upwards toward the Belly;  
but not so as to force the *Catheter*  
out of the *Sphincter*, and by these  
kind of motions, if the *Lithotomist*  
be very attentive, and there is a  
Stone, he will hear a little Sound,  
like that of two small Stones touch-  
ing one another, or at least some-  
thing will be felt, that makes a  
Collision

CHAP. VII. Collision with the *Catheter*, as if it were rubb'd with a Stone.

If it floats, it may be felt, when there is Urine in the Bladder, for which reason I commonly search with a *Silver Wire*, pretty large, and bent like a *Catheter*: If you introduce your hollow *Catheter*, you must stop the hollow with your Thumb, to keep the Urine in the Bladder, but if nothing be felt, the Urine is to be let out by the *Catheter*, and then diligent search is to be made.

There are *Rugosities* in the Bladder that sometimes deceives him that searches; but they may be discern'd by a skilfull *Lithotomist*, because in that Case he will only find something that is soft, or but moderately hard, and which makes no sound by the Touch of the *Catheter* as a Stone does: The Bladder



Bladder in Children has no *Rugosities* like that in Men. CHAP. VII.

Certain it is, says *Zacutus Lusitanus*, that many strange things breed in the Bladder, that Counterfeit the Stone, as *Nervous Membranes*, *Crystal fashion'd Globes*, incredible quantities of *Phlegm* and other strange things, which being kept there for some time, are afterwards (if passable) voided with the Urine.

The most excellent Dr. *Ludovicus Nonnius* relates, that a certain *Portugal Gentleman*, after grievous Torments in making Water, all supposing he had the Stone, died: Upon opening of him, there was found in his Bladder a very hard lump of *Flesh*, which could scarcely be cut asunder with a *Raizor*, and withal near the Neck of the Bladder there was found a *Tumour* like a *Goose-Egg*, full of clammy  
tenacious

CHAP. VII. *tenacious Matter*, and all the body of the Bladder was so full of hard Flesh, that it could scarcely contain 6 Ounces of Urine, which was the Cause, when he was alive, of his being almost continually oblig'd to be making Water.

From this we may learn, how cautious People ought to be, whom to intrust when they are troubled with the Stone, or the Distempers that resemble it, since for want of Skill and Experience many have been Cut that have had no Stone at all.

*Monf. Tolet* relates, That a *Catheter* was introduc'd into a Man's Bladder to search for a Stone, and to draw forth his Urine, and that after the Bill of it had been inclin'd to the Right-side, and several times thrust to the bottom of the Bladder, and no Stone felt, the  
Rings

Rings were press'd down towards the Belly, as if there had been a design to bring out the *Catheter*, but when the Bill of it was judg'd to be near the *Sphincter* of the Bladder, it was turn'd to the Left-side, (which could not have been done sooner, because of the largeness of the bent Part of the *Catheter*, and the smallness of the Patients Bladder) and then the *Lithotomist* continu'd to search for the Stone, which still not being felt, was afterwards found by searching with another *Catheter*, the Bill of which, from the beginning of the bending was not so long, and therefore that *Catheter* turn'd the easier in the Bladder.

This very Case happen'd likewise to me some Years ago, in searching one who liv'd near *Pickadilly*.

H

These



CHAP.

VII.



These Observations instruct us what *Catheters* are to be chosen; the *Bills* of those for searching and voiding of Urine, are not to be as long as those we are to make *Incision* upon, which are channel'd or furrow'd.

In some Men the *Urethra* is very narrow, and then small *Catheters*, like those for Children but of a sufficient length, are requir'd.

*Catheters*, that do not easily bend or bow are likewise to be chosen, and that depends more on the Workmanship of the Artist that makes them than on him that uses them.

When a Stone is in the Neck of the Bladder, it is not necessary that a *Catheter* should be introduc'd so far as the bottom of it, because the Stone may be felt, provided the *Catheter* be only introduc'd as far

far as the bottom of the Ure-  
thra.

CHAP.  
VII.



When there is a *Carnosity* in the *Urethra*, which will not admit of searching with a *Catheter*, the *Lithotomist* must search by putting his Finger into the *Rectum*, and if there be a Stone, he will find a hard and ponderous Body towards the *Pubes*.

If there be an *Inflammation*, no search must be made till after Bleeding, and then it must be done very gently.

H 2

CHAP.

CHAP.  
VIII.

## C H A P. VIII.

*Of a Phymosis, and of a Stone in  
the Urethra.*

**M**ANY Children have a *Phymosis*; to search them we must hold the *Penis* betwixt the Little Finger and the Ring Finger of the Left-hand, the back of the Hand being towards the Belly, and with the other Fingers on one side the *Penis*, and the Thumb on the other, pull back the *Prepuce*, as if one intended to skin the *Glans*, gently pressing towards that part of the *Glans* where the *Urethra* may be most dilated, then with the Right-hand the *Catheter* is to be gently introduc'd, and which you may  
feel



feel with the Fingers of the other <sup>CHAP.</sup>  
Hand, placing them along the <sup>VIII.</sup>  
*Urethra* on the underside of the  
*Penis*.

If the *Prepuce* be so streight that  
the *Catheter* cannot be introduc'd,  
or if the *Lithotomist* cannot hit up-  
on the Orifice of the *Urethra*, there  
is no danger in dilating the *Pre-  
puce* a little sideways with the point  
of a common *Incision Knife*, *Lancet*  
or pair of sharp *Scissars*.

Before you introduce the *Cathe-  
ter*, squeeze the *Penis* along the *Ure-  
thra* with your Fingers, and thus  
try whether you do not feel some-  
thing hard, which stops the passage,  
as *Carnosities* or *Stones* do.

When by feeling thus with your  
Fingers you find there is a *Stone*,  
and that it sticks in the middle of  
the *Penis*, between the *Glans* and  
the *Testicles*, there must be no

CHAP.  
VIII.

searching with the Catheter, but having easily press'd the Penis with the Fingers from the Pubes to the Stone, the Lithotomist must with an Extracter (almost like an Earpicker) Oil'd, take out the Stone; of these you must have of several sizes.

See the Figure N<sup>o</sup> 11. in the Second Table of Instruments.

But I have met with Stones too large to be extracted out of that part without Incision: Sir John M----- in Winchester-street, had a Stone in the Urethra which was Pyramidical, the smaller End shew'd it self at the upper End of the Glans. A certain Artift in London, whom I shall not name, was Four Hours busie in endeavouring to take out that Stone, had dilated and pull'd, and did what he could, Sir John S----- at last told him that one Mr. Boyer at Richomond had

re-

recommended him to a Foreign CHAP.  
VIII.  
*Physician*, but he had forgot his Name, the Artist having thought a while, said he knew whom he meant, and named me, who being the same Sir John----- was told of, the Artist came himself for me, I immediately went and made *Incision a latere*, took out the Stone and imploy'd the Artist to Heal the Wound : The lower part of the Stone was as big as a small Nutmeg.

*Aetius*, tells us of a certain Man, who being cruelly tormented with the Stone in the Kidney ; it was at last by an *Emollient Bath* brought down from thence to the Bladder, and so to the *Urethra*, where (near the Nut of the *Penis*) it stuck Nine Days, occasioning much Misery by the stoppage of the Urine, the *Malady* growing worse and worse,



CHAP. he seem'd to have a *Cachexy*, the  
VIII. Urine being distributed through  
the whole Body, to remedy which,  
*Baths*, *Fomentations*, and *Emollient*  
*Medicines* were us'd, but to no  
purpose; at length cutting, was  
propos'd, to which the Patient  
(being courageous, and rather chu-  
sing to suffer a little Pain, than die  
in that Condition) consented. And  
a Surgeon made an *Incision* be-  
neath, and with a fitting Instru-  
ment took out the Stone, which  
was exceeding hard and rough,  
whereupon many Pints of Urine  
were evacuated, which stunk so  
horribly, that it almost poyson'd  
the Standers by: The Blood was  
soon stop'd, the Wound afterward  
heal'd, and the Patient recover'd.  
That Man had more courage  
than a certain Surgeon that *Zacutus*  
*Lusitanus* mentions, who tho' a  
skillful

skillful Man would not have a Stone taken out of his *Yard* (which stuck in the middle of the *Urethra* to the stopping of *Urine* for 15 Days together) but rather chose to Die with it, which he did: His *Yard* being afterwards open'd, there was found a great round and very hard Stone, of a red Colour, having points round it, which causing large effusion of Blood, together with the stoppage of *Urine* kill'd him. *Thus many have died, who by Cutting might have been Cur'd.*

The same Physician relates the Case of a Strong Man, who was troubl'd Eight Days together with a continual Stoppage of his *Urine*, so that frighten'd with his *Malady* he began to despair of his Life: Several Physicians us'd many remedies to break and bring away the Stone, by means whereof it was

CHAP. was brought to the End of the  
VIII. *Yard*, but there stuck so fast, that  
it could not by force or use of  
*Medicaments* be remov'd, and the  
Patient was afraid to be Cut, tho'  
he knew it was the most certain and  
present Relief, but refusing, sat  
himself upon a Stool, and laid his  
*Yard* (which was very much swell'd  
by the bulk of the Stone in the  
passage) upon a wooden Table,  
and being full of Indignation, or ra-  
ther Mad as it were, with his con-  
tinual Pain and Watchings, he gave  
a mighty blow with his Fist upon  
his *Yard*, and broke the Stone into  
small bits, which presently came a  
way with abundance of Urine, and  
freed him from Death.

Whilst I was Writing this, the  
following Letter came to my  
Hands,

*Bury*



Bury St. Edmunds, in Suffolk, July

27, 1709.

Sir,

SEEING in the Advertisement of a late *Post-Man*, your intentions of publishing a Treatise of the Stone, and observing your request to any Physician or Surgeon, to communicate any thing (before the publishing of your Book) they thought Remarkable or worthy of Observation, I thought my self oblig'd to acquaint you with the following Case, which came under my Care, July 22d. 1698.

A Boy of this place, aged about Three Years, by Name *James Seaden*, had been afflicted with the Stone from his Birth, and

CHAP.  
VIII.  
~

and after the use of several remedies ineffectually; His Parents were advis'd to the repeated use of *Castle-Soap*, which within one Month after his constant taking of it, brought either out of the Kidneys, or out of the Bladder into the *Urethra*, the Stone I have here sent you, it lodg'd just below the Neck of the *Glans*, and had caus'd by its lying there some time, such an ulcerated Tumour upon the *Glans*, as look'd *Prima Facie* Cancerous; However, observing the Efforts of Nature, I propos'd taking away the Stone which was consented to, and I did it by dividing the whole substance of the *Glans*, on the Left-side the *Frenum*, upon doing which, and squeezing the *Penis*, the Stone came forcibly out, and fell to  
the

the Floor without breaking, my  
Patient being plac'd in the Arms  
of a Man, who sat upon an  
High-Chair, Holding him in the  
posture as Patients usually are,  
when the Operation of *Lithotomy*  
is perform'd; I put a *Cannula*  
into the *Urethra*, and brought the  
Lips of the Wound together by  
dry Stitches. My Patient that  
Night Urin'd freely *per Cannulam*; I  
us'd *Emmollient Fomentations*, and  
some *Abstersives* at first, and after-  
wards, by the use of the *Aq. Camphu-  
rata*, & *Aq. Calcis*, with proper ban-  
dage made by Strips of Plaister, I  
completed the Cure. He was  
Purg'd during the time with  
*Lenients*, and took such quan-  
ties of *Emulsion*, as he could  
be made to do. He is now in  
perfect Health, of a Robust Ha-  
bir, and has had no Symptoms  
of

CHAP.  
VIII.  




CHAP. ' of that tormenting Distemper  
VIII. ' since. The Stone I observ'd fell  
' with some force upon the Floor,  
' and did not break, it had not  
' been expos'd to the Air above  
' Three Hours, but by putting of  
' it into the Box I have now sent  
' it in, and shutting down the Lid,  
' the Box being rather too little  
' the light pressure of the Lid broke  
' it into those many peices you now  
' have. What I take to afford mat-  
' ter of speculation, is the effect of  
' the Soap, the vast distention of  
' the *Urethra*, and the Operation of  
' the *Nitrous* Particles of the Air  
' upon the Stone after its Extracti-  
' on, which I suppose render'd it  
' so Friable. What is to be said  
' upon these *Topicks*, I must leave  
' to your discerning Faculties, and  
' if by your Descants you can  
' make it serviceable to Humane-  
' kind,

‘ kind, you have the liberty of CHAP. VIII.  
‘ Publishing it. I am, Sir, a Stran-  
‘ ger to your Person, yet not to  
‘ your Reputation in the World;  
‘ having read over with extream  
‘ satisfaction your Treatise of *Can-*  
‘ *tharides*, and give me leave to  
‘ assure you,

*I am your Admirer, and*

*most humble Servant,*

JAMES STURGEON.

P. S. The truth of this Obser-  
vation is Notorious, and the *Prae-*  
*mium* I receiv’d for doing of it is  
Recorded in the publick Book of  
Accounts, belonging to St. James’s  
Parish, my Patient being an object  
of Charity.

The

CHAP.  
VIII.

The Effect of the Soap in the Case this Gentleman has sent me an account of, may be easily accounted for, when we consider the Ingredients with which it is made, viz. a *Lixivium*, almost like *Oleum Tartari per Deliquum*, which is brought to the Consistence of Soap with *Oleum Commune vel sebum Animalium* by boiling together; the first no doubt like all fix'd Salts, very much attenuated the Blood, and caus'd thereby a very plentiful separation of Urine which forceably drove the Stone (that hinder'd its expulsion) into the *Urethra*, the *Fibres* of which, the *Oleaginous* Particles of the latter had relax'd, so as to cause that Passage to suffer *Delatation* sufficient for the Stone to pass to the *Nut* of the *Penis*.

The



The effect of the Nitrous Par-  
ticles of the Air upon such a hard  
Stone, causing it in a few Hours  
after *Extraction*, by a very slight  
compression to break (or Crumble,  
as I have often seen Stones do,)  
to small pieces, may be easily  
solv'd and accounted for, by an  
Artist competently skill'd in *Chy-*  
*mistry*; for by Experiments in that  
Noble *Art*, we find that some  
Bodies of but a loose Cohesion  
cannot be resolv'd by very strong  
(and with respect to other Bodies  
the most penetrating) *Menstruums*,  
but rather become harder and  
more compact; when nevertheless  
their Parts may be very easily se-  
parated and the bond of *mixtion*  
presently broke by *Dissolvents* much  
weaker, whose points are adapted  
to its Natural or Accidental *Pores*:  
And thus the Stone, tho' not ca-  
pable

CHAP. pable of being dissolv'd, or its  
VIII. Parts separated by the *Sal Armoniac*  
with which the Urine is stor'd, the  
figure of its Pores being not suitable,  
so as to admit the Points of the Salt to enter and separate its Parts; yet was easily penetrated by the subtile Nitrous Particles of the Air, the figure of which suited to the Pores of the Stone, so as to gain Entrance and destroy the Bond of mixtion; and thereby render'd it friable and easie to be broken.

Now from what I have here said, perhaps some may imagin that it is an easie thing, acting upon Mathematic-Chymic Principles, to find out a *Menstruum*, that will Universally dissolve Stones in Humane Bodies; but they will be of another Mind if they duly consider the foregoing Chapters, where I have treated of the Difference of Stones  
taken

taken from Mankind; some of <sup>CHAP.</sup> which instead of being render'd <sup>VIII.</sup> friable when expos'd to the Air, become more firm and compact: So that the great difficulty and what seems to me next to an impossibility (especially if we may judge 'by what has hitherto been ineffectually try'd) is how to adapt a Medicine to every particular Stone we would dissolve, since what will break or dissolve one when out of the Body, will not another; and this comes very near to a demonstration that one *Menstruum* cannot possibly dissolve all Stones in Humane Bodies; yet I would not discourage the Ingenious from searching after such a great Blessing.

But to proceed: If the Stone in the *Urethra* be not too large, the *Glans* and part of the *Urethra* may



CHAP. be dilated, and the Stone or  
VIII. Stones be extracted with a proper  
Extractor.

The *Urine* serves for a Remedy ; and if there has been a *Contusion* or great Pain, it is enough to Foment the *Penis*, cum *Ol. Rosar.* and cover the *Glans* with a Pledget dipp'd in *Linimentum Arcei*, dissolv'd with a little *Mel Rosar.* moderately binding it on with a cross Bandage open in the middle: And if there be occasion a Girdle may be put about the Patient, to which the Band may be ty'd, also a Collar may be put about the Neck, like a Chair-man's-Strap, the lower part of which is to be fasten'd to the Girdle, that it may not sink lower than one would have it : This Bandage serves for other Distempers of the *Penis*; in putting it on begin to apply it to the *Glans*, and then bring it

it nearer to the Belly, with slight CHAP.  
VIII.  
Rollings and Circumvolutions to keep the Medicine fast to the *Part*; and when it is brought near to the *Pubes*, an indifferent hard Knot is to be cast, and then the two heads at the other Extremities of the Band or Truss are to be tied to the Girdle.

The precise length and breadth of all the parts of this Bandage cannot be determin'd, because it depends upon the judgment of the *Lithotomist*, to make them of such a length and breadth as that they may not be cumbersome to the Patient.

There is still another way of extracting the Stone out of the *Pennis*, when it is at a distance from the *Sphincter* of the Bladder, which is this :

Having drawn the Skin of the *Prepuce*, as much as one  
43 can

CHAP.

VIII.

can do gently to the *Nut* of the *Penis*, make a *Ligature* with a *Fillet* betwixt the *Stone* and the *Pubes*; or otherwise with the *Fingers* compress the *Penis*, drawing the *Skin* strait or tight on each side, where the *Stone* is observ'd to stick, and afterwards make *Incision* upon the *Stone*, a little side way in the *Urethra*, that so it may be taken out by means of the *Extractor* introduc'd into the incis'd *Orifice*; then the *Ligature* being remov'd and the *Skin* loosen'd, it will of it self stop the *Wound*, which will be cur'd by the *Balsam* of the *Urine* almost alone, applying only a *Stiptic Fomentation* often to the wounded part, or making an *Injection* of something of that nature into the *Urethra*.

CHAP.



## CHAP. IX.

*Of the time of Searching and Cutting ;  
of the Instruments ; Of the Pa-  
tients Diet, and of the first Pre-  
paration for the Operation.*

**T**HE Patient may be search'd,  
or his Water drawn forth by  
the *Catheter* at any time, in order  
to discover the Disease.

If he finds himself troubled  
with the Stone, it is dangerous to  
delay Cutting, and in some Pa-  
tients an immediate Operation is re-  
quir'd ; but we shall not here speak  
of the time of Necessity, but on-  
ly of that of Election or Choice,  
which is laid hold of, when the  
Distemper is in such a condition as  
to give opportunity to do things

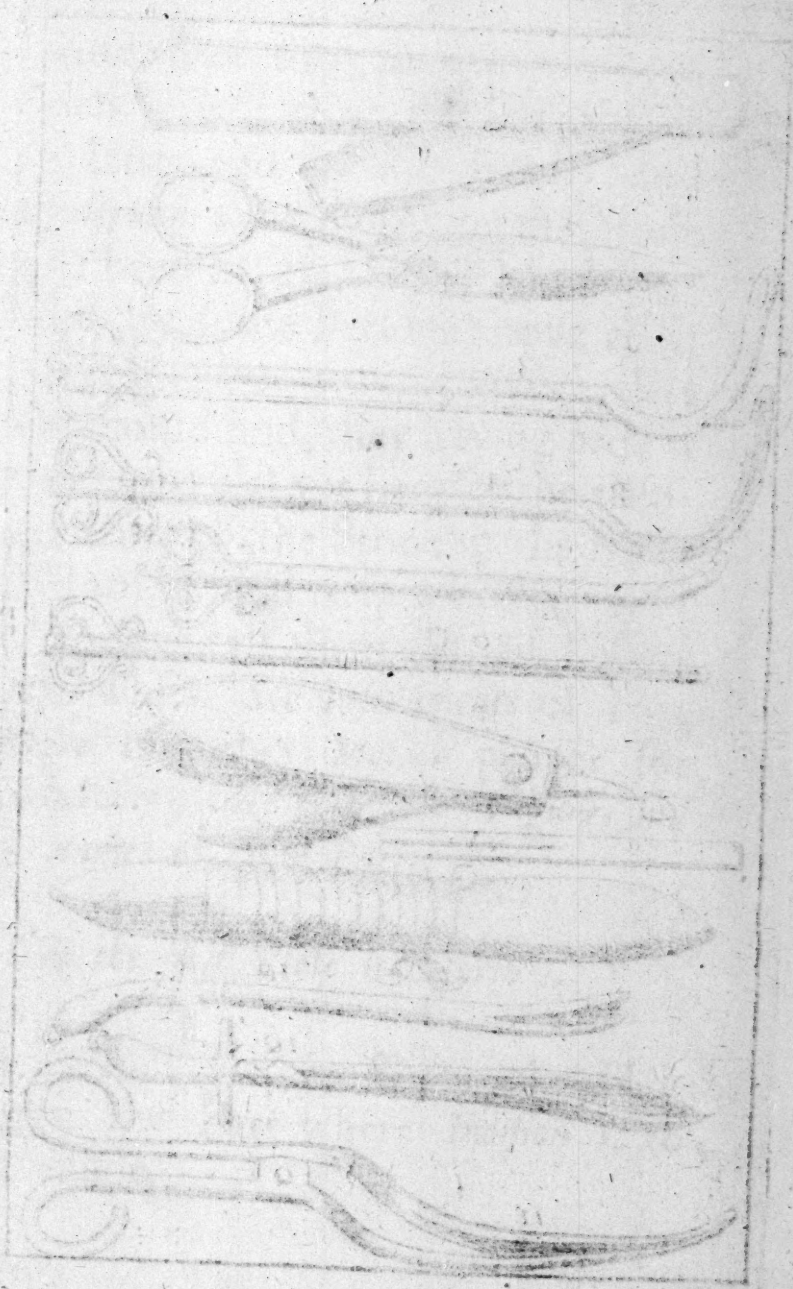
CHAP. in much order, and without any  
IX. Precipitation.

'Tis well known that the *Spring* is the most Temperate Season in the Year, and gives Vigour and Strength to Mankind, which they find renewing in themselves as it were at that time, and then they undertake what was interrupted by the excessive Cold or Heat of other Seasons.

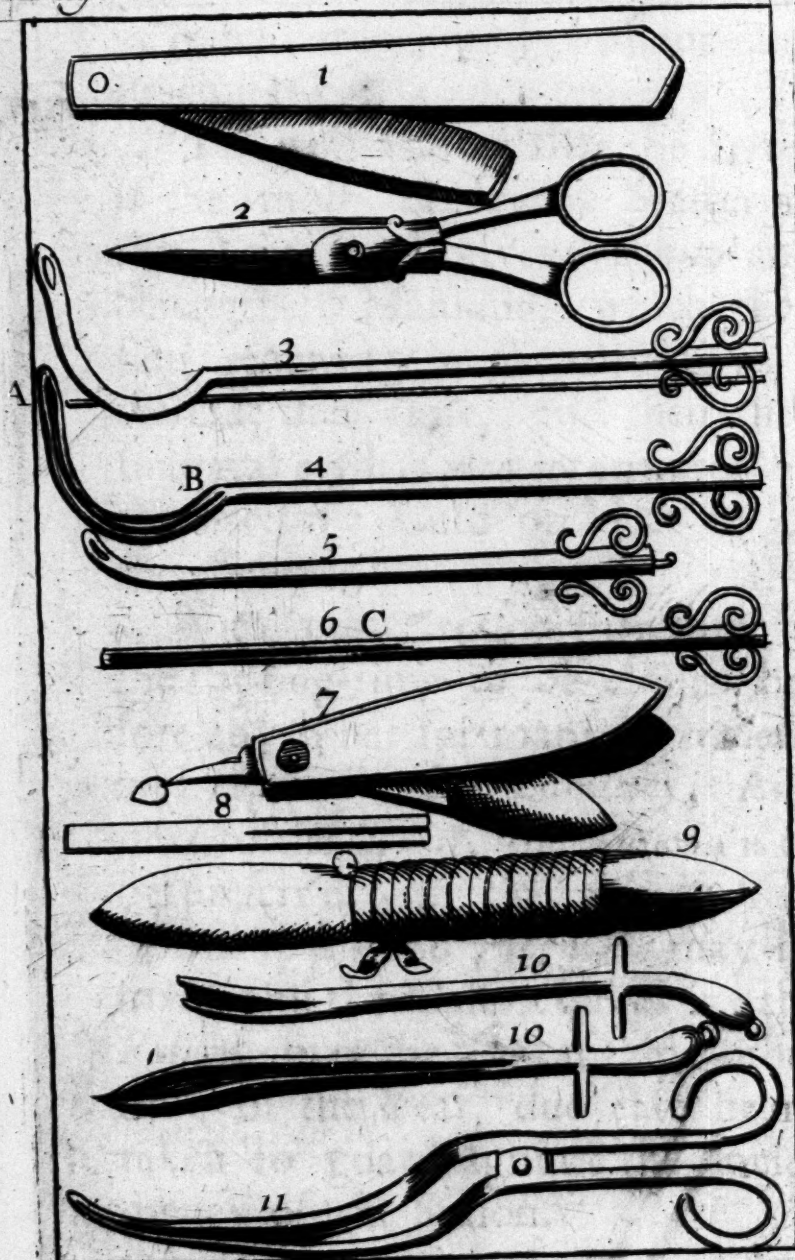
With great reason therefore, is the Spring-time to be chosen before any other for many *Operations*, and especially for *Lithotomy*: And next to the *Spring*, the *Autumn* is to be preferr'd.

But if a good *Prognostic* may be made and the Case requires it, the *Patient* may be Cut at any other time of the Year, due care being taken to guard against the Inclemency of the Season.

And







And now tho' *Lithontriptics* (of CHAP. IX. which I shall treat particularly at the latter end of this Book) and *Menstruum's* for dissolving the Stone have been in use, and mightily extoll'd by some Persons above these 40 Years (but to no purpose, that ever I could find, they having prov'd mere *Chimera's*) yet here for the absolute Cure of the Stone in the Bladder I am oblig'd to speak of *Remedies* (if I may call them so) of *Chirurgery*, which are *Instruments* of Iron, Silver or other Metals proper for *Lithotomy*; take here their *Figures* and the names of their *Parts*.

*In the first Plate is describ'd.*

1. A. *Raisor*, to Shave the Hair from the Part where *Incision* is to be made.

2. Com-

## CHAP.

## IX.

2. Common *Scissars* for ordinary *Incisions*.

3. A hollow *Sound* or *Probe*, call'd a *Catheter*, for searching of Men, and making them render *Urine*, and its *Stilet* or *Wire* to cleanse it.

4. A *Catheter* or *Staffe*, for making *Incision* upon in Men, furrow'd on the back from A (which is the *Bill* or *Bend*) to B without any *Cavity* in its length.

5. A hollow *Catheter* and only crooked at the *Bill*, for searching of Women, and it's *Wire* for cleansing it.

6. A



6. A strait Catheter or Staffe, hollow'd and furrow'd from the Bill to C. It is sometimes us'd when Incision is made at the Orifice of the Urethra.

7. A Bistori, that opens like a Lancet, with a Point and Edge as that has, only the Point blunter, and at the other End it has a flat tail to keep it firm against the handle when it is open'd,

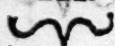
8. A Roller to mount the Bistori, it must be slit at the End, be a Finger broad, and a Foot and an half long.

9. A Bistori mounted or arm'd with the Roller.

10. Con-

## CHAP.

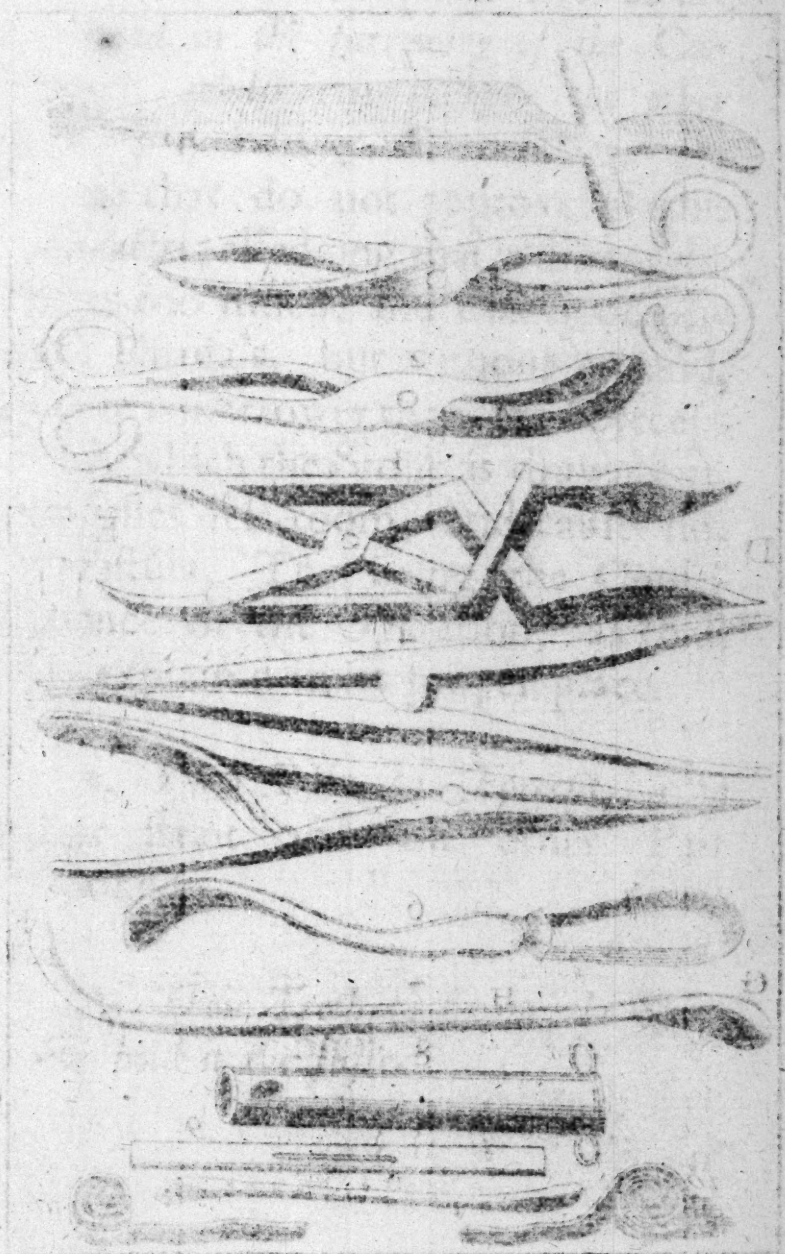
## IX.



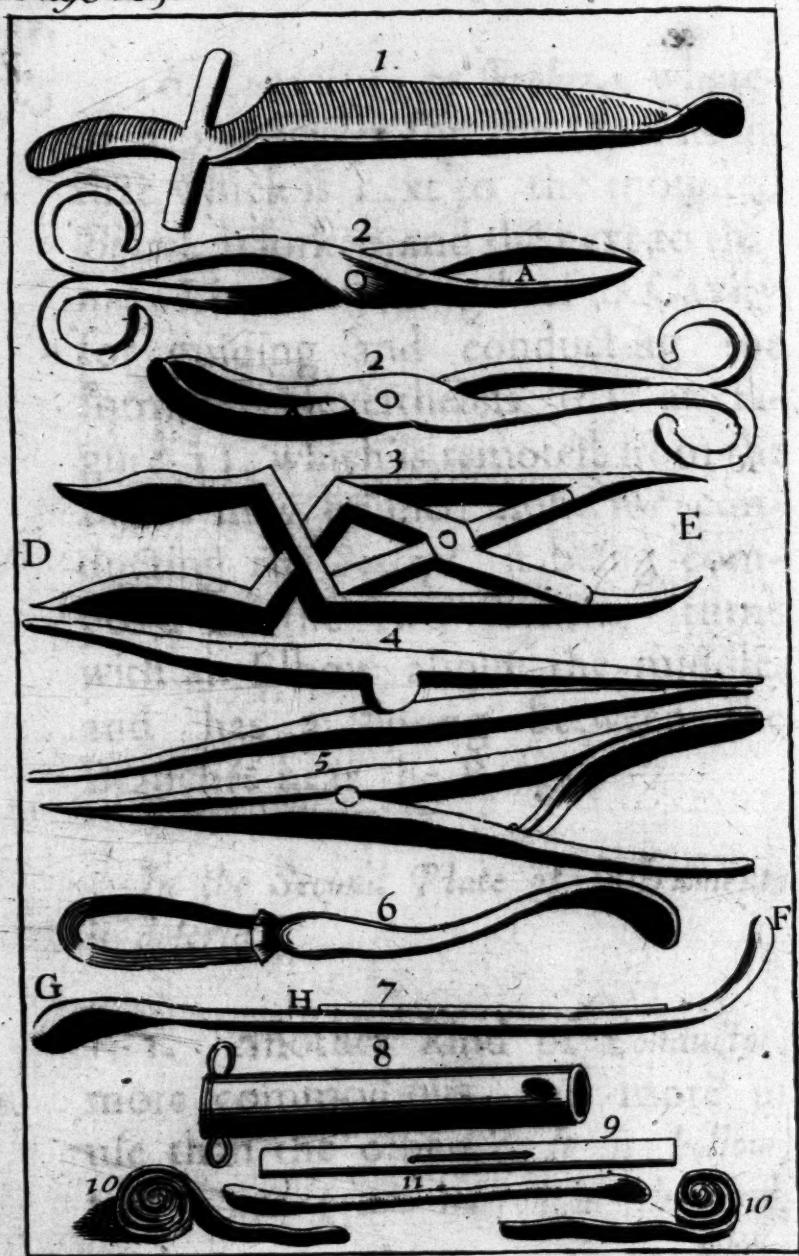
10. *Conductors* or *Probes*, where-  
of a pair serves for the Operation,  
that which is next to the mounted  
*Bisturi*, is forked, and the next to that  
has a Line in the length of its Cavity  
for guiding and conducting the  
former. Nevertheless that at Fi-  
gure 11. which is remotest from the  
*Bisturi* may be used alone for con-  
ducting the *Forceps*, it being com-  
pos'd of the two former, turns  
with an Elbow about the middle,  
and has a Spring between the  
Branches near the Rings.

*In the Second Plate of Instruments  
is describ'd.*

1. Another kind of *Conductor*,  
more commodious, and more in  
use than the others; It is hollow,  
taper, and grows narrow at the End,  
where







where there is a Bill, that is to be in-  
 troduced in the furrowing of the Ca-  
 theter, whilst it is held by the other  
 End, shap'd like a T. There are  
 some that do not approve of this  
 Conductor, alledging that it dilates the  
 parts too much, and that it occasi-  
 ons Fistula's, but without ground,  
 for it is narrower than the Forceps  
 with which the Stone is drawn out,  
 possesses less room, and causes not  
 a Fistula, That being the Conse-  
 quence of the Operation, as shall  
 be explain'd in its proper place.

CHAP.  
IX.

2. Two Pair of Forceps, one  
 Pair strait and the other Pair  
 crooked.

A. Their Teeth to fix in the Stone  
 and hold it the faster.

3. A

CHAP.  
IX.

3. A Compound or great Dilatatory  
for Men.

D. *The Bill.*

E. *The Handle.*

4. A simple Dilatatory for Women; the Extremities of it are blunt and very small, the Branches are join'd in such a manner, that closing the one end, the other end opens, it represents the Letter X.

5. Another Dilatatory that may serve for Women and little Boys: It has a Spring near the Handle, Dilates but moderately, and may be us'd with safety.

6. A



6. A *Hamulus* or *Hook* to pull out the Stone or Stones that are in the passage, either in the lesser Operation or otherwise.

7. A *Button* or *Scoop*, about 10 Inches long, and as big as a Quill.

F. The part properly call'd the Button.

G. The other part which is hollow, and call'd the *Scoop* of the Button.

H. A slight Line to conduct the Forceps.

8. A *Cannula*, or hollow *Tent-Pipe*, having Rings at one End call'd the Head, the other End is call'd the Point, where there are  
two

CHAP. two holes, call'd the Eyes of the  
IX. Tent.

9. A *Fillet* for mounting the *Hollow Tent*, introducing the Tent into the Slit in the middle of the *Fillet*, and putting the two Ends of the *Fillet* through the Rings of the Tent, then it is call'd a Tent mounted, the *Fillet* is to be two Foot long, and a Finger broad.

10. Two *Ligatures* or *Scarffs* for Men and Women, they are made of *Silk* and *Wool* mix'd together, each of them must be Four or Five Ells long, and Four or Five Fingers broad; but if they cannot be immediately had, Bands of strong *Linnen Cloath* may be cut of the same length and breadth, which may afterwards be cut to serve for *Trusses* and for dressing the Patient.

11. An


11. An *Extractor*, for Extracting CHAP. IX.  
Stones out of the *Penis* or *U-*  
*rethra*.

In Hospitals they have a *Chair* on which the Patient is to sit, to have the *Operation* perform'd; there are two Bars or Rods of Iron behind in form of *Butteresses*, and hooked at one end, that they may enter into the Rings of the Chair, and sharp at the other, that they may strike firm into the *Floor* and keep the Chair perfectly steady, in case the Patient struggles and uses Violence in the time of the *Operation*. The *Chair* must be placed a little obliquely, that the light may come on the Right hand of the *Lithotomist*, that he may see the better, when he is about the *Operation*. But instead of such a *Chair*, the Patient may as well be seated upon a *Table*.

K

with



CHAP. with a *Matrafs* or *Quilt* over it,  
IX. whereof one part must cover the  
 back of a common *Chair*, set about half a Foot distance from the edge of the *Table* in a *Hooping* manner. There must be also a *Sheet* folded long ways with many folds to cover the *Chair* or *Table*, and the *Matrafs* in the time of the *Operation*.

Most *Lithotomists* have their *Instruments* at that time orderly deposited in a *Budget* made for that purpose, so as readily to be taken out when they find occasion.

But I commonly put my *Instruments* in order in a *Dish*, causing a *Servant* to stand or kneel on one *Knee*, on my *Right Hand* to hold them ready for my use.

It is fit that several *Eistories* should be mounted or arm'd tho' there be but one *Operation* to be made, because

cause their Points are something CHAP.  
IX.  
blunted in using; it is necessary  
also to have some Tow wound a-  
bout the *Bistory* to save the Point  
harmless before the *Operation*, and  
to have some Linnen Cloaths and  
Napkins in readiness.

All the *Instruments* may be made  
of Steel, or Iron, or good tem-  
per'd Metal, that they may not  
bend in using.

But the *Catheters*, *Button*, and  
*Tent-Pipes* are best made of Silver,  
that being less subject to Rust.

It is always requisite to have in  
the *Catheter-Box*, a piece of Sponge  
moderately moist'ned with Oil of  
Roses, or Sallad-Oil, to Anoint the  
*Catheter*, otherwise it may some-  
times happen to be wanting when  
there is occasion for it.

CHAP.

IX.

Of each kind of *Instruments* there ought to be several, and those very well polish'd.

Having spoken of the *Instruments* of *Surgery*, we must likewise according to the Rules of *Physic* consider what other Things are necessary before, at, and after the *Operation*, and concerning them we shall give methodical Instructions as follows.

First, Let the *Patient* (if *Plethoric*) be blooded, taking away a good quantity, or rather bleed him more than once before *Cutting*, which will make him more easie, abate the *Inflammation* of the Bladder, and much lessen his Pain and Heat; but if the *Patient* be weak and feeble omit Bleeding: Let his Diet be Cooling, Moistening and of easie Digestion; his Drink pleasant *Emulsions*,



sions, fair Water with a brown <sup>CHAP.</sup>  
Toast and one Glass of Canary : <sup>IX.</sup>

Let him be kept in a moderate temper; lying in a good Bed, not having too much Covering; keep his Body soluble and not Costive; and let his mind be as easie as his Case can bear.

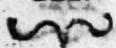
A cooling *Lenitive Glyster* is proper to be exhibited the Day before the *Operation*.

If Purging be requisite give the common *Purge*, cum *Rhab. Tamarind. & Manna* cum *Syr. Ros. Solutiv.*

But in these Cases a *Physician* should be call'd in, except the *Lithotomist* be one himself, and yet tho' I one, I never hinder'd other *Physicians* coming, but am rather glad of their Company, always remembring that in the multitude of Counsel there is Safety.

CHAP.

IX.



*Plus vident oculi quam oculus.*

In the Operation we are to take care to have good *Cordials*, good *Assistants* to hold the Patient, and good *External Restraining Medicaments*. *Oxyerat*, and *Oxyrhodium* are excellently useful.

The *Bandages*, *Plaisters*, &c. as well for Men as Women must be prepar'd and laid in great readiness, they are as follows.

1. A *Ligature* or *Collar*, which must be put over the Patient's Head, and hang down as low as the *Navil*: It is a great Band, and when the two Ends are ty'd together is of an *Oval Figure*, and may be put about the Patient before the *Operation*.

2. A

2. A *Bolster* or *Compress* of a moderate thickness, Three or Four Fingers broad, to be put upon the Wound when the Patient is to be carried to Bed after the *Operation* is finish'd; it ought to be laid upon a Table, or upon a Plate by it self.

3. An *Astringent Plaister* of a sufficient bigness, to cover the Belly.

4. A *Belly-cloath*, which is a great *Bolster* or *Compress* to cover the Belly, it is to be dipp'd in warm *Oxycrat*.

5. A *Bandage* or *Truss* with Four Heads, which may be call'd *Twins*, because they begin in the same



CHAP. place, and are design'd for one and  
IX. the same use.

6. A *Truss* like a double T.  
call'd the second *Truss*.

7. A *Pledget Plumacean*, covered  
with *Astringents*.

8. *Astringent-Plaisters*, of several  
Sizes.

9. A *Plaister* longer then broad,  
and somewhat longer than the  
Wound, to be apply'd some Days  
after the *Operation*, over the *Pledget*.

10. A small square *Bolster* or  
*Compress* indifferently thick, and  
somewhat larger than the *Plaister*.

11. Ang-

11. Another double *Compress* or *Truss* for Men, an Inch broad and a Foot long. These two *Bolsters* are to be moisten'd in warm *Oxy-crut*.

12. A *Ligature*, or long Band to be Swathed above the Knees after the Wound is Dress'd, that the Patient may keep them within a moderate distance to one another.

The *Bed* must also be prepar'd and cover'd with a Rolling Sheet, or a Sheet doubled into many folds; it must be laid cross the *Bed*, just in the Place where the *Kidneys* and *Thighs* of him that is to be Cut are to Rest, and there must be several Sheets ready to shift the *Bed* when it is wet, which must also be warm'd with a Warming-Pan,  
if

CHAP.  
IX.

if it be needful: It is requisite also to have a good many Napkins in readiness to put under the Patient, when he has a *Looseness*, that he may be the sooner laid dry; some *Lithotomists* order a *Cere-Cloath* to be put betwixt the Sheets and the Bed, &c. to preserve it from being spoil'd by the Urine, but I generally order a fine Leather Skin, which is pleasanter to the Patient and does full as well: It is very necessary also, that a Cord be fast'ned to the top of the Bed, or some other place, by the help of which, the Patient may raise himself with the greater Ease when there's occasion: As soon as the Patient is laid in his Bed after the *Operation*, an *Anodyne draught* must be given, that he may lie quiet and go to Sleep.

CHAP.



## C H A P. X.

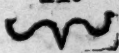


Of the Posture and Situation into which Children are put, when they are to be Cut.

ALL things being prepared, the Catheter's put into Oil, the Bistourys or Incision-Knives and Tents, mounted, a Tub with warm Water, plac'd underneath the Table, the Forceps, Conductors, Button and Scoop and a Dilatory (if it be necessary) all well plac'd, the Patient must be brought to the place of Operation and set upon the Chair, or Table prepar'd and fix'd a little obliquely, that the light from the Windows may dart upon the Right-side of the Lithotomist, (as before taught) who is to keep his Instruments

CHAP. *ments* from the sight of the Pa-  
 X. *tient.*  
 ~~~~~

And if it be a Child between Four and Twelve Years of Age, two Servants may hold him by the Hands and Feet on each side, whilst another getting up upon a little Stool, or something plac'd behind the *Chair*, and looking forwards, may commodiously lean upon the Patient's Shoulders, placing the Thumb of each Hand toward his Back, and the other Fingers upon the *Clavicles*, for the surer hold; the Servant who is on the Right side of the Patient, ought to put his Left-hand, under and betwixt the Patient's Knees, and take fast hold of the Wrist of his Right-hand, and that the Child be not hurt, the Sleeve of his Shirt or Waistcoat may be pull'd down to cover his Hand; after that, the same Servant with his
 Right-

Right-hand must lay hold of the Leg on the same side by the Foot and Ankle. CHAP.
X.


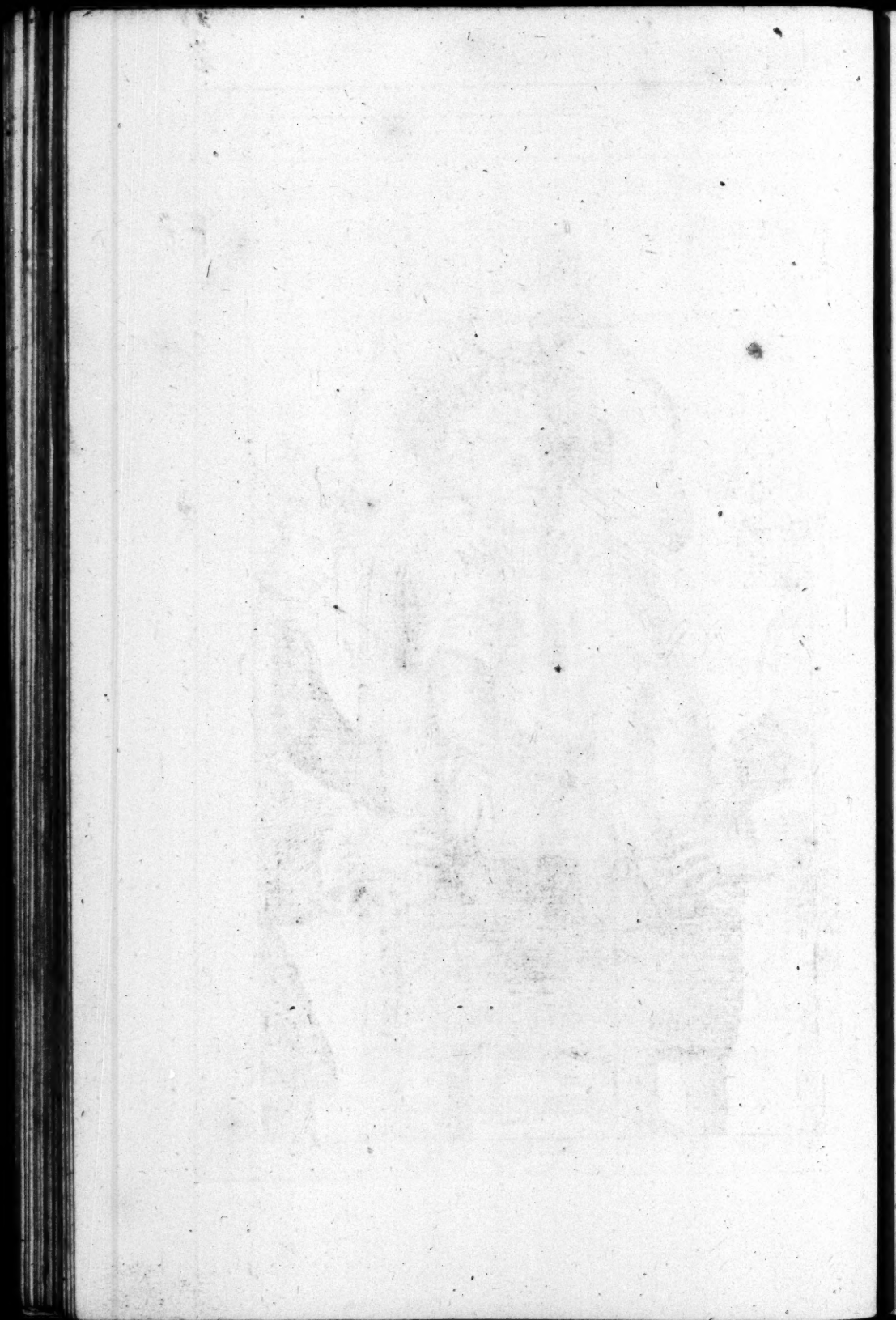
The Servant on the Patient's Left-hand must do the like, taking hold of the Left-Arm of the Patient with his Right-Hand, and the Left-Leg near to the Foot with his Left-Hand.

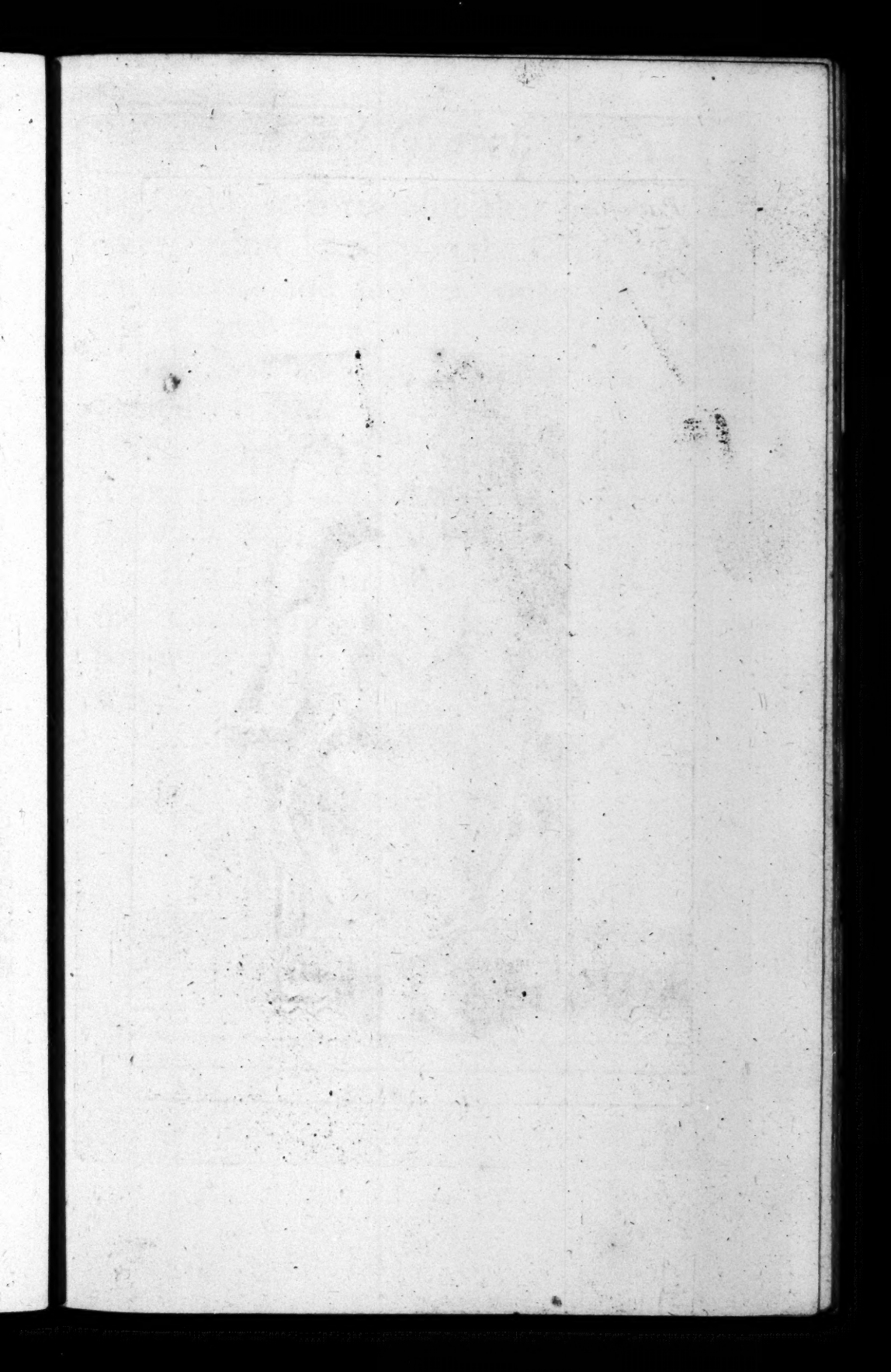
In this Posture the Child's Hands must almost touch his Heels, and if he be but any way held fast and his Thighs spread wide, the *Lithotomist* will have Room sufficient to *Operate*, yet because Children do sometimes extreamly struggle and strive, two other Servants may likewise keep their *Knees* asunder; but it is chiefly to be observ'd in this posture, that the Patient lean half backwards that his Fundament may be seen, and that his Feet do not rest upon any thing, so that
he

CHAP. he may have the less force to stir
X. or move himself. See here the Figure of the Posture.

But when Children are very Young, the easiest and best way, is to place them in a Man's lap to have the Operation perform'd; for which end the *Lithotomist*, must chuse a Strong Man, and cause him to sit upon a pretty high common Chair, or upon the End of a Bench, with his Knees tied together who having a large Cushing or Pillow, put against his Belly and upon his Knees, and a Sheet over it, must take the Child that is to be Cut upon his Knees, and putting his Hands under and betwixt the Childs Legs, must take hold of his two Wrists, by this means the Child is put into a very convenient and easie posture to be cut; But besides the Man that is to hold the







Page 143.



the Child, it is requisite that some CHAP.
other Person lean upon the Child's X.
Shoulders, and another open his
Knees, and keep his Feet steady.

*Take here the exact Figure of this
Posture.*

Yet when a Child is large and
strong; and considering that the
Operation is sometimes laborious,
and that the Man who is to hold
the Child may be weary, it is
better to make use of - the first
way.

CHAP.

CHAP.

XI.



C H A P. XI.

Of the different ways of extracting the Stone, amongst the rest of the Lithotomia Franconiana.

GREAT Pain, Inflammation, Carnosities, and Callosities do sometimes hinder the Lithotomist, that he cannot introduce a crooked Catheter into the Bladder. Prosper Alpinus, in his 3d Book, the 14th Chapt. relates several passages of the Egyptian Physicians, who (he says) extracted Stones out of the very Bladder without Cutting, by only dilating the Urethra, *Per flatum*, or by blowing into the Penis.

They had Pipes of several sizes, beginning with very small ones, and gradually introducing larger, and thus extending more and more,
till

till the Passage was wide enough to admit the Stone to be extracted without *Cutting*; but to do this in Men must be very difficult indeed, if ever it was done; however we let the Story pass without contradiction, because we have it from such Eminent hands.

CHAP.
XI.

Indeed the *Urethra* in Women may be dilated to a strange largeness, and Stones be extracted from them without *Cutting*, as I my self have often done; particularly some Years since from a young Gentlewoman about 17 Years of Age; and of late from one Mrs *Fowler*, in *Durham-Yard*, near *Chick-lane*, in *Smithfield*, who gave me leave to mention her Name and whose *Urethra* I very much dilated and took a Stone from her without making any *Incision*; it is not a Year and half since. Both these Women I perfectly Cur'd,

L

they

CHAP. they having no involuntary Emif-
XI. sion of Urine, but retain their
Water as if no Stone had been
taken from them.

Via in Mulieribus (as I said be-
fore) *latior est & brevior quam in*
Viris.

But the method of *Petrus Francus*,
(who is call'd by *Fabritius Hildanus*,
the most excellent and most ex-
pert *Lithotomist*,) is worthy to be
noted; he first prepared the Body
of the Patient for some Days,
which Preparation I have given
you before, then he made *Incision*
upon the furrow'd *Staffe* on the
Convex part of it, putting a
hollow *Tent-Pipe* or *Cannula* into
the Wound, for the Urine to run
through, going no further that
time, but leaving the Stone in the
Bladder,

Bladder, except it appear'd in the Wound, which then he took out, either with a pair of *Forceps* or the *Hamulus*, but if the Stone appear'd not in the Wound, or if it was too big to be extracted, he left it behind, dress'd the Wound and laid his Patient in Bed: And some Days after, when the Patient was in a good condition, without a *Fever*, and the Wound began to digest, and the Stone appear'd in it (as it will do commonly) then he took it out; this he informs us he has done often with very good Success.

But if the Stone did not appear he put his Fingers in *Anum*, and making compression upon the *Muscles* of the *Abdomen*, forc'd the Stone towards the Wound, (which he then did without any danger, because the *Tumour* or *Inflamma-*

CHAP. tion was gone off, the Urine having
XI. had its free course, and the Patient
using an exquisite Diet) and drew
it out.

But if the Stone was so big, that
it could not be extracted without
hurting the *Membraneous*, part of the
Bladder, he then broke the Stone,
which such *Instruments* as *Fabr.*
Hildanus describes, P. M. 113.

The *Instrument* must be strong,
and the Teeth of it sharp, and if
the Stone cannot be broke into
pieces small enough at one time,
the use of the *Instrument* must be
repeated again two or three Days
after, till the Stone be so broken
that the pieces may be brought forth,
without hurting the Neck of the
Bladder; in the interim *Anodine*
Medicines must be given, and hot
Fomentations apply'd to keep of an
Inflammation or *Gangrene*, he says
thus:

thus: *Consultius est Calculum frustulatum extrahere, quam ægrum tanto dolore atque miseria opprimi, semperque ex duobus malis minimum est eligendum.* CHAP. XI.

This method I never practis'd; but when I was concern'd with Mr. George Sutor Deceas'd; we had a Patient a French-Man, Mr. James Sweet by Name, who liv'd in Nicholas-street, near Shore-ditch, and whom Mr. Sutor Cut on the 24th of March 1688, and it happen'd that by indeavouring to extract the Stone he broke it into many pieces; however with my assistance several of the pieces were taken out; but the Patient bleeding very much, and growing faint, it gave me reason to fear he would Die under our Hands, if we proceeded further, therefore his Wound was Dress'd, and he was laid in his

L 3

Bed,

CHAP. Bed, and continued very Weak a
XI. great while, and was so bad that
it was not safe to attempt the extracting the remaining pieces of the Stone (which did not appear in the Wound,) therefore the Wound was heal'd up, and in sometime his strength recovered; but he felt some Pain, tho' not half so much with the Fragments of the Stone left in his Bladder, as he did before it was broke: But in two Years after his Pains being great he had Courage enough to have the *Operation* perform'd again, and I successfully Cut him myself, and took out 32 Stones of various shapes and pretty large, he was then 22 Years of Age, and is now alive and well.

But *Petrus Francus* had another method of Extracting the Stone from the Bladder, which

is call'd the *Hypogastric* or *High Operation*, He was the first that practis'd *Lithotomy* that way, and gives the Reason of his attempting it, when he tells us of a Child of Two Years Old, who having a Stone in the Bladder as big as an Hens Egg was brought to him to be Cut: He us'd all his Dexterity and Industry to force the Stone down into the Neck of the Bladder, but found it impossible to be done: The poor Child was in that Torture and Misery, that the Parents wish'd him rather Dead than he should live longer in so doleful a Condition: *Petrus Francus* on the other hand thinking it would tend to his dishonour not to take away the Stone, at last resolv'd to make tryal whether he could not bring it to the very *Groin*, which he did by putting his Fingers

CHAP. in *Anum*, lifting up the Stone, and
XI. causing one of his Servants on the
other side opposite to him, to press
it down to the place intend-
ed for *Incision*, which he made,
took out the Stone, and tho' the
Child was very weak, recover'd
him and heal'd the Wound; but
he admonishes others not to fol-
low this method of *Cutting*.

Una hirundo non facit Ver.

Yet I once had a Patient in *Long-
Lane* in *Moorfields*, upon whom I
was oblig'd to perform this high
Operation, and very successfully
Extracted the Stone, by making
Incision near the *Groin*, the Patient
soon recovering; which shews
that Wounds in the *Fibrous* Parts
of the Bladder are not always
Mortal.

CHAP.

CH A P. XII.

*Of the Apparatus Minor, or Lesser
Operation for Men and Boys.*

Cornelius Celsus was the Inventor of this Operation, which he describes in his 7th Book, Chap. 26. it is call'd the lesser Operation because it requires fewer Instruments: When the Patient is fix'd in one of the foremention'd Postures the *Lithotomist* must first depress the lower part of the *Abdomen* or Belly of the Patient; that the Stone may the better fall to the Neck of the Bladder. Then putting one or two of his Fingers in *Anum*, and forcing the Stone to the proper place as Art directs, he must make Incision on the Left-side of the *Suture* in the *Perineum* upon the Stone, and endeavour

CHAP. endeavour to cast it forth if it be
XII. little, with his Finger, which I
~~~~~ have several times done, but if he  
cannot, he must take it out with the  
*Hamulus*, and if that can't be done,  
he must remove his Fingers out of  
the *Anus*, and introduce the *Button*  
into the Wound to search for the  
Stone, and having felt it, must  
conduct a pair of *Forceps* upon the  
*Button* to lay hold of it, and gently  
draw it out.

If the Patient be little, there is  
no need of making him jump, be-  
fore he be *Cut*, it is enough that he  
be put into a Posture and held by  
the Servants; the *Lithotomist* must  
have his Nails pair'd, and must not  
always dip his Finger or Fingers in  
Oil, for they being put up dry in-  
to the *Intestinum Rectum*, will pre-  
vent its being wrinkled or lying  
on the upper part of the Stone, for  
if





Page 155.



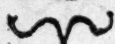
if it should so happen when the *Incision* is made, the *Lithotomist* must of necessity Cut the *Intestine*, which the Finger or Fingers being put up dry will prevent and keep the *Intestine* in its due place, but if the Fingers are dipt into Oil, the *Intestine* may slip towards the Stone, and produce this great danger: I give only this hint to prevent ill consequences, but leave every *Lithotomist* to his Liberty: *abundans Cautela non nocet.*

In this Operation let a Servant lift up the *Scrotum* with one Hand, and with the other armed with a Compress lean upon the Belly, to make the Stone come down; as it is represented in this Figure.

Note, That before the *Lithotomist* makes *Incision*, he must dry the *Perineum* and stretch the Skin.

CHAP.

XII.



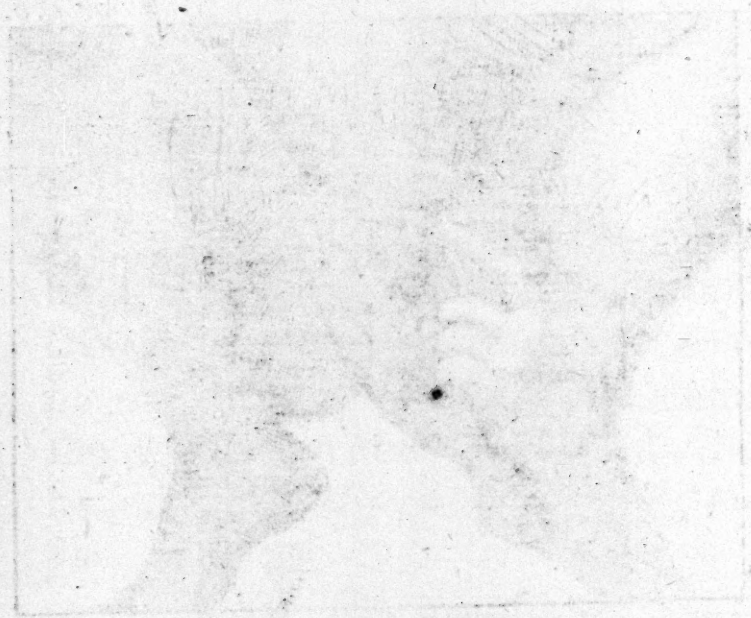
The Tumour that the Stone (cover'd with *Teguments*) makes, renders the *Incision* on the side of the *Suture* easie, and which may be made long enough for extracting of the Stone; the *Lithotomist* must not fear the spoiling of the Edge or Point of the *Bisturi* or *Knife*, for every time it is to be us'd it must be set again: When the *Incision* is made, the Fingers must not be drawn out of the *Intestinum Rectum*; but keeping them in, the *Hamulus* must be put into the Wound and flip'd between the *Pubes* and the Stone. As described in this Figure.

By what Operation soever a *Lithotomist* Cuts a Patient; when a Stone breaks, he must with his Fingers in *Ano*, keep the fragments forward to the Wound, and take them out with the *Scoop* or *Hamulus*,  
and



Page 156.





and also search with the *Button* afterwards least any Pieces should be left behind, and if any are felt, they must be extracted with the *Forceps* as before taught.

CHAP.  
XII.

If the Patient has been *Cut* for the Stone before, then the *Incision* must be made upon the *Cicatrice* or *Fistula*: In my Practice I have *Cut* Seven Patients, who had undergone the *Operation* before, and they all recovered, one of them had been *Cut* twice before, and lives still in *Watling-street*, and is very well.

CHAP.



CHAP.  
XIII.  
~

## CHAP. XIII.

*Of the Lesser and Greater Operation  
for Women and Maids.*

**T**HE *Lithotomist* must thrust the first Finger (called *Digitus Index*) of his Right-Hand into the *Vaginam Uteri* in Women, inclining the Finger upwards to the *Os Pubis*, and with his Left-Hand must press the *Belly* downwards, and if there be a Stone in the *Bladder* he will find it; otherways he may search with the Womens *Catheter* introducing it into the *Urethra* and moving it forwards and backwards, up and down, on the Right and Left, and thus he will find the Stone or Stones if any there be; but if the Patient is very  
Young

Young the *Lithotomist* must search CHAP. XIII.  
*digito in anum Immisso*, as you search  
 little Boys.

When the *Lithotomist* is to extract the Stone, he must make use of the hollow strait *Catheter*, which being introduc'd into the *Urethra*, must be held by a Servant, and the *Orifice* of the *Urethra* must be Dilated by a Simple *Dilatatory*, conducted in the *Cavity* of the *Catheter*: The *Orifice* must not be dilated too much forward, because the *passage* being short, if the *Fibres* are delacerated, it may cause an involuntary emission of the *Urine*; the *Dilatation* being made, the *Catheter* must be taken out with the *Dilatatory*, and the *Fingers* being still in the same place, into which they were introduced, the Stone must by them be kept forward and be drawn out with the *Hamulus*, or with the *Forceps*,

CHAP. *ceps*, in the same manner as from  
XIII. Little Boys.

But Young-Women and Girls may be excus'd from the Violence which they suffer by this Lesser Operation, because the Great Operation is more convenient, and is thus perform'd; the Patient (if very Young) must be plac'd upon a strongs Man's *Knees* (as before describ'd for Little Boys) and being held in a convenient Posture, the *Conductor*, which is shaped like a Sword, and has a Bill, must be introduc'd into the *Urethra*, and then a small *Dilatatory*; and having made a moderate *Dilatation*, while the *Dilatatory* is still open, the *Lithotomist* according to his own discretion and the bigness of the Stone, may make a small *Incision* to the Right and Left of the External *Orifice* of the *Passage*, then drawing  
out



out the *Dilatatory*, and introducing the *Forceps* along the *Conductor* must take hold of the Stone, and extract it in the usual manner. But strong Women must be plac'd in the same Posture to have this *Operation* perform'd, that Men are, which Posture we shall describe in the following Chapter; it is scarce credible how much the *Urethra* may be *Dilated* both in Men and Women: I have taken away from a Virgin of Sixteen Years of Age, a Triangular Stone of the bigness of an Egg, if we may imagine it of that shape, by only *Dilating* the *Urethra* without *Cutting* or in the least tearing it; and by applying ordinary means, in Three Weeks she was sound and firm, holding her Water as well as ever.

CHAP.  
XIII.

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There

CHAP.

XIII.  


There are some *Lithatomists* who having introduc'd the strait hollow *Catheter*, thrust in also the *Conductor* shap'd like a Sword; and then the *Catheter* being drawn out, they easily slip in the other forked *Conductor*, because the first has a Line that directs the second; and between these two *Conductors* which they press betwixt the Fore-finger and Middle-finger of the Left-Hand, they thrust in the *Forceps* to continue the *Operation* and take out the Stone. And thus the Great *Operation* is much easier perform'd in Women and with abundance less Danger than in Men.

CHAP.

## C H A P. XIV.

*Of the Apparatus Major, or Great  
Operation in Men and Boys.*

**J**Oanes de Romanis a Physician of Cremona, in the Year 1520, invented and practis'd at Rome, the great Operation, so called, because it requires more Instruments than other methods do.

Men who are Cut by the great Operation occasion a great deal more trouble than Women, not only in respect to the Operation it self, but likewise in respect to the Cure; because their Urethra is much more crooked, long, and narrow, and their way of Living renders that part many times subject to more



CHAP. Diseases than those Parts in Wo-  
XIV. men.

When the Patient is prepar'd and ready, he must be set upon the *Chair* or a *Table* of an indifferent length, his *Buttocks* a little rais'd, and his Head and Body inclining backwards, and leaning upon the back of a common Chair reversed; and that the Patient may continue fix'd in a good Posture, two *Scarffs* must be made use of in this manner; having laid them long ways, they must be tied both together by a Knot in the middle, so that the ends of the *Scarffs* being extended may appear like a Cross, and then they must be put about the Patient's Neck, (if they be too long, they may be short'ned by tying another Knot,) the Knot and a Noose made in the same  
*Scarffs*

*Scarffs* must hang down behind. CHAP.  
This being done, the *Lithotomist* XIV.  
taking two ends of the *Scarffs* on  
the right side, and a Servant the  
other two ends on the Left-side  
both of them standing before the  
Patient, and making him set his  
feet against them, the *Lithotomist*  
and his Servant each on his side  
must bring one of the ends of  
the *Scarffs* before, upon the *Clavicles*  
and another end be-  
hind upon the *Shoulder-Blades*,  
and then bringing them cross-  
ways under the *Armpits*, they  
must twist them together, giving  
them two or three turns; after  
which they must bring the Patient's  
*Knees* as near as they can to his  
*Belly*, and at the same time bring  
one end of the *Scarffs* on the inside  
of his *Knees*, and another on the  
outside of them, and join them

CHAP.  
XIV.

both together underneath, giving them a cast over one another; then also the Patients *Heels* must be raised near to his *Buttocks*, that his *Legs* may be tied in the same manner; and after that, causing him to put his Four *Fingers* of each Hand under the *Soules* of his *Feet*, and his *Thumbs* below the *External Anckle-bones*, as if he were to take hold of his *Heels*, they must tye the *Wrist* and *Hand* to the *Leg* and *Foot* on each side, bringing the ends of the *Scarffs* under the *Feet* like *Stirrops*, and drawing them betwixt the *Feet* and the *Thumbs*, because the *Ligatures* being to be made indifferently strait, they would hurt the *Thumbs*, if they were ty'd upon them, to which the Patient's struglings would not a little contribute. See here the exact Figure of the Posture and Swathings.

This







This posture is somewhat terrible to the Patient, and therefore since there are some Men of a strong Resolution and invincible Courage, if they be unwilling to suffer these *Ligatures*; it will be sufficient to bind their *Thighs* and *Legs* only in the manner describ'd, causing their Arms to be held by two Men; or perhaps they may like it better to have their *Hands* tied together, for which end laying their *Wrists* one upon another, they must be ty'd together with the middle of a *Band* wrapp'd two or three times about them, and then two indifferent hard Knots, being cast the two ends of the *Band* must be brought about the Neck and ty'd, together with a slip Knot, so that the Patient's *Hands* may rest about the Pit of the Stomach or the *Cartilago Ensiformis*.

CHAP.  
XIV.



CHAP.

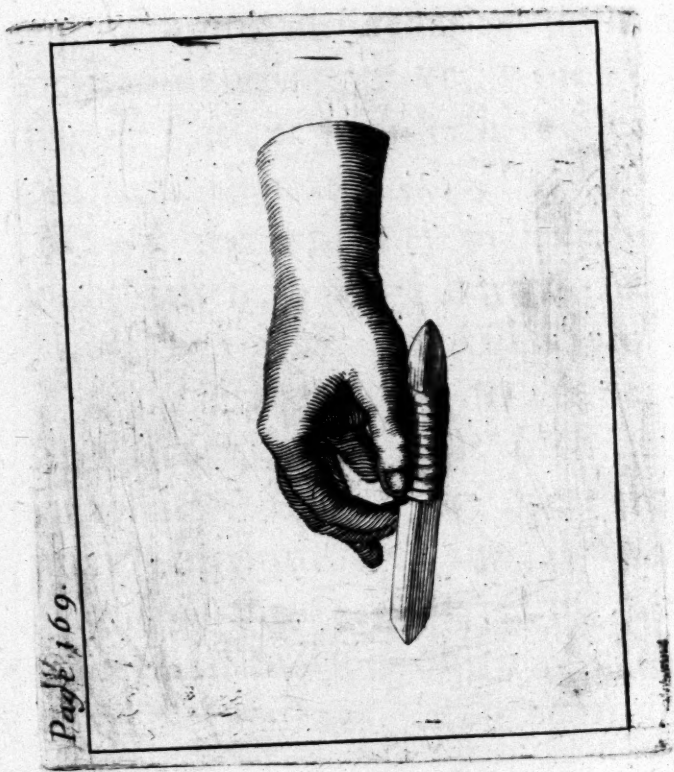
XIV.

Whilst this *Apparatus* is making, it is fit the *Lithotomist* should speak to the Patient, but not in many words, that he look upon him and encourage him with discourse, shunning every thing that is undecent, and obliging those that are present to be silent and attentive, which comforts a Patient wonderfully; calling to mind that to make light of the *Disease*, the Infirmary or Expressions of a Patient, is no better than to insult over a Man in Affliction.

It is always best to have few Spectators, and those such as are necessary to help; a great many may incommode the *Lithotomist*, frighten the Patient, and put a bad Construction on the Accidents that sometimes accompany the *Operation*.

When







When the Patient is seated, the *Lithotomist* must place his People to support him, spread open his *Knees*, lean upon his Shoulders, and to lift up the *Scrotum*, a Servant must be at the Right-Hand of the *Lithotomist* to hold the *Bistoury*, ready for him to take it, when there is occasion, but must hide the Blade in his Hand, as here represented.

CHAP.  
XIV.

The Servants are plac'd in the same manner for the Lesser as for the Great Operation; but they hold the Patient in a different manner, as it has been represented by the *Figures*.

When there is a *Hernia* or *Burstness*, the *Scrotum* is to be lifted up very high, and care is to be taken in making the *Incision* not to hurt the *Testicles*, nor the Parts affected by the *Hernia*.

Before

CHAP.  
XIV.

Before the *Operation* there is sometimes a *Procidencia* or falling of the *Anus*, occasioned by the straining of the Patient: If the falling be considerable, the *Lithotomist* may thrust it up without Violence, and then lay a *Bolster* upon the *Anus*, which a *Servant* is to press hard: But if the *Servant's* Hand hinders the *Operator*, there must nothing be put to the *Rectum*, for after the *Operation* is over it is easily reduced, and in all my *Practice* it never return'd again, using *Stiptick Fomentations*, &c.

If the Patient has been *Cut* before, (as already mentioned) the *Incision* is to be made upon the *Cicatrice*, taking heed not to cut the *Suture*, because it does not so easily *Cicatrise*, and is also attended by many *Accidents*.

The *Incision* in Children is at least made Two Fingers breadth long; in Men Three or Four Fingers breadth or thereabouts according to the bigness of the Stone, and circumstances of the Patient. It ought not to be too large, for when the Stone is in the passage. if the *Incision* happen to prove too small, it may easily be enlarg'd with the *Bistory*, or a pair of *Probe-Scissars*.

The *Incision* of the Skin and Membranes is easily made, but many times the *Urethra* is not sufficiently opened unless one press the *Bistory* hard in the furrow of the *Staff*.

*Incision* is never made in the Neck of the Bladder, but always in the *Urethra*, and Experience convinces that a great *Incision* in the Operation is as soon Cicatris'd as a small one.

The Patient being set in a posture and bound with the *Scarffs*, his Arms and



CHAP. and Legs held by two Strong Men,  
XIV. and if need be two others to keep his  
Knees asunder, and one placed behind the *Chair* or *Table* to press upon his Shoulders, *Lithotomy* must then be performed, if possible by the *Lesser Operation* before taught, or at least by this Great, introducing the furrowed *Catheter*, with which the *Lithotomist* first searches, and is certain if there be a Stone or not.

N. B. If nothing be felt with the furrowed *Catheter*, it is necessary to introduce a hollow *Catheter* that has a shorter *Bill*, making the Patient void his Urine thro' it, and if there be a Stone it will by that means be more easily found, because when it floats, it will follow the course of the Urine; the *Bill* of the *Catheter* also being short will turn better in the Bladder. When the Stone is found, the furrow'd *Catheter* is again to be introduced. If

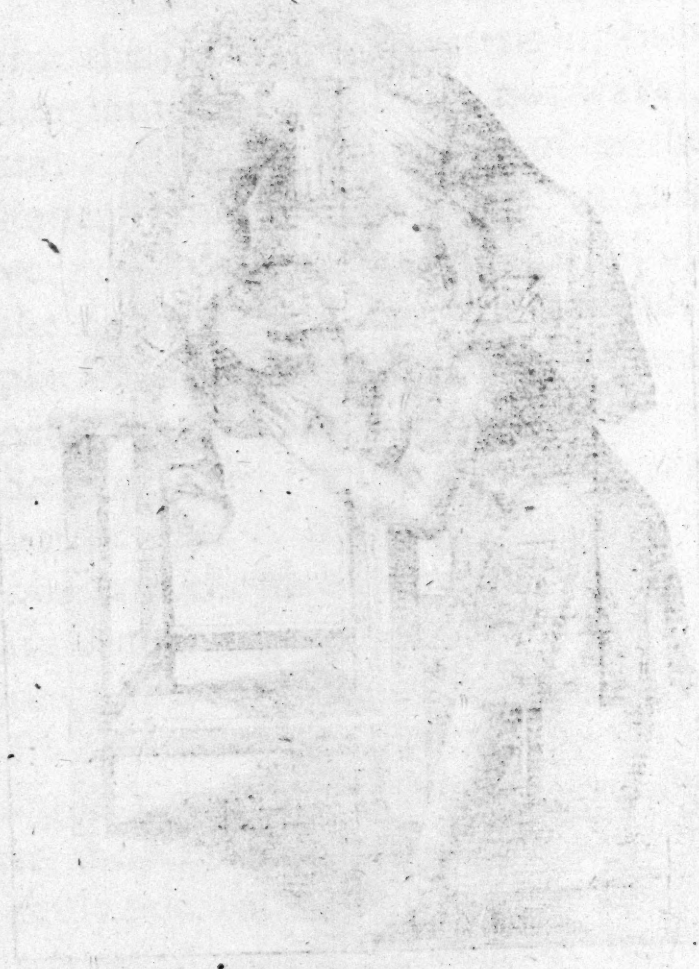
If the Patient has been *Cut* before, CHAP. XIV.  
it is harder to introduce the *Catheter*,  
and therefore one is to be taken of a  
size that would suit with a younger  
Subject, and sufficiently long, ac-  
cording to the Age of him that is  
to be searched. There are some *Li-*  
*thotomists* who hold the *Catheter* them-  
selves when they make the *Incision*:  
Others cause a *Servant* to hold it,  
who is placed at the side of the Chair,  
opposite to the Part where the *Litho-*  
*tomist* is to make the *Incision*; for Ex-  
ample, the *Lithotomist* performing his  
*Operation* on the left side of the *Suture*,  
the *Servant* must be on the Patient's  
Right-Hand, and having wiped and  
dried the *Scrotum* and *Perineum*, he  
must lift up the *Scrotum* with his Left-  
Hand, and rest his other Hand  
upon the Rings and end of the *Ca-*  
*theter*, inclining the furrowing a little  
to the Patients left side, but must  
take

CHAP. take care not to make it come out of  
XIV. the Bladder, which he may avoid if  
he bring not the *Rings* of the *Catheter*  
too near the *Belly*.

The *Lithotomist* ought to mind first  
that the *Servant* holds it right, bid-  
ding him hold it fast and not waver,  
and causing others to lean upon the  
*Patient's* *Shoulders*, because at that  
very time the *Lithotomist* ought to pull  
the *Suture* toward the *Right-side*,  
placing the *Thumb* of his *Left-hand*  
near the *Anus*, and his other near the  
*Scrotum*, and having felt with the  
*Fore-Finger* of the *Right-hand*, and  
observed the place where the back of  
the *Catheter* is, in the same manner as  
one does to find the *Vein* before  
*Blood-letting* (as represented here in the  
*Figure*) and pulling still the *Suture*  
to the *Right*, with his *Right-hand* he  
must take the mounted *Bistori* from  
a *Servant*, and in making the *Incision*  
he







he is to search for the furrowing of CHAP. XIV.  
the *Catheter*, into which he is to thrust  
the point of the *Bistory*, and then  
press hard, above towards the *Scrotum*  
and below, sinking the Wrist, that  
the point of the *Bistory* may be al-  
ways directed into the furrowing un-  
derneath the *Catheter*, that the *Ure-*  
*thra* may be exactly Cut, avoiding  
the *Scrotum*, the *Rectum*, and the  
*Hemorrhoidal Veins*; then he must re-  
turn the *Bistory* to a Servant, and  
take the *Conductor* and introduce  
it into the furrowing; after which,  
with the Left-hand he must lay  
hold on the *Catheter*, by the end  
which the Servant held.

To prevent the Fingers of the *Li-*  
*thotomist's* Left-hand from sliding du-  
ring the time of the *Incision*, he may  
make use of a very narrow *Compress*  
to help him to press and pull the  
*Suture* towards the Patient's Right-  
side. If



CHAP.

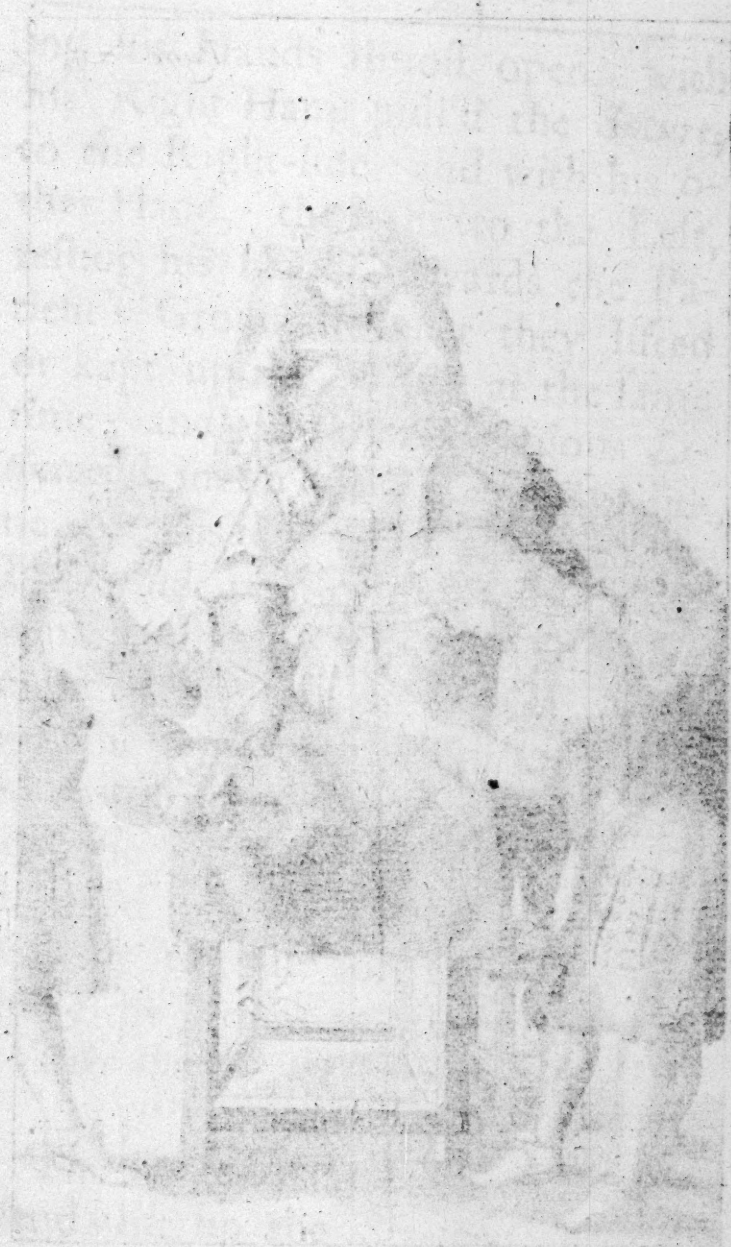
XIV.

If in making *Incision* the *Lithotomist* himself holds the *Catheter*, the *Servant* who extends the *Perineum* may upon the same account put very narrow *Compresses* betwixt his *Fingers* and the *Patient's Skin*, that so he may hold the two sides of the *Suture* firmer towards the *Thighs*; by that means the *Humidity* will not hinder him to press upon them as much as is necessary.

I remember *Monsieur Collot* who's several *Operations* I have seen both at *Amsterdam* about 40 Years ago, and here in *London*, about 33 Years since, performed the *Operation* in this following manner.

After he had introduc'd the *Catheter*, and was sure of the *Stone*, he caus'd a *Servant* plac'd on the *Patient's Right-side* to lift up the *Scrotum*, and having dried the *Parts* that were wet, the same *Servant* holding

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ing his Hands almost open, with CHAP.  
his Right-Hand pull'd the Suture; XIV.  
to the Right-side, and with his o-  
ther Hand, the Skin to the Left,  
resting his Hands towards the Pa-  
tient's Groins, so that they lifted  
or kept up the *Scrotum* at the same  
time; and then that Ingenious *Li-*  
*thotomist* inclin'd the *Catheter* a lit-  
tle towards the *Belly*, and with his  
Left-hand press'd upon the *Rings*,  
whilst with his Right-Fore-finger he  
mark'd the place of *Incision*; then  
was the *Bistory* or the *Knife* present-  
ed to him, and during the time,  
that the Servant held the *Perineum*  
stretch'd to the Right and Left,  
without the use of *Compresses* he  
made the *Incision* as others do.

*Take this for the Figure of it.*

The Servant may also with one  
Hand lift up the *Scrotum*, whilst

N

with

CHAP.

XIV.

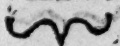
with the other that is extended he presses hard upon the *Perineum*, holding between Two Fingers the place where the *Lithotomist* intends make the *Incision*. Otherwise the Servant may hide his two Thumbs in his Hands, and with his two Fore-fingers extend the *Perineum* for the same purpose.

The furrowing of the *Catheter* being discovered, and the *Bistory* return'd; Monsieur Collot took a *Conductor* with an Elbow towards the middle, (and which is composed of two Branches) and thrust the *Bill* of it into the furrowing of the *Catheter*, and when the *Conductor* was introduc'd into the Bladder, he drew out the *Catheter*, and conveigh'd his *Forceps* betwixt the Branches of the *Conductor*, to introduce 'em into the Bladder: And then the

Con-

*Conductor* being taken out, he continu'd the *Operation*.

CHAP.  
XIV.

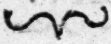


These two ways are very good, and have both their advantages, for when the *Lithotomist* himself holds the *Catheter*, he is sure what place it is in; yet after the *Incision*, it is sometimes hard to find the furrowing because of *Fat*, *Membranes* and *Blood*, that hide it; it is true that after *Incision*, the point of the *Bistory* may be left in the furrowing, and may be held by a *Servant* whilst the *Lithotomist* slides the *Bill* of the *Conductor* along the *Bistory*, but when a *Servant* holds the *Catheter*, after that the *Incision* is made, and that the *Lithotomist* hath given back the *Bistory*, as we have just now describ'd, he may put the *Nail* of his *Left-Thumb* into the *Wound*, and having found the slit or furrowing of





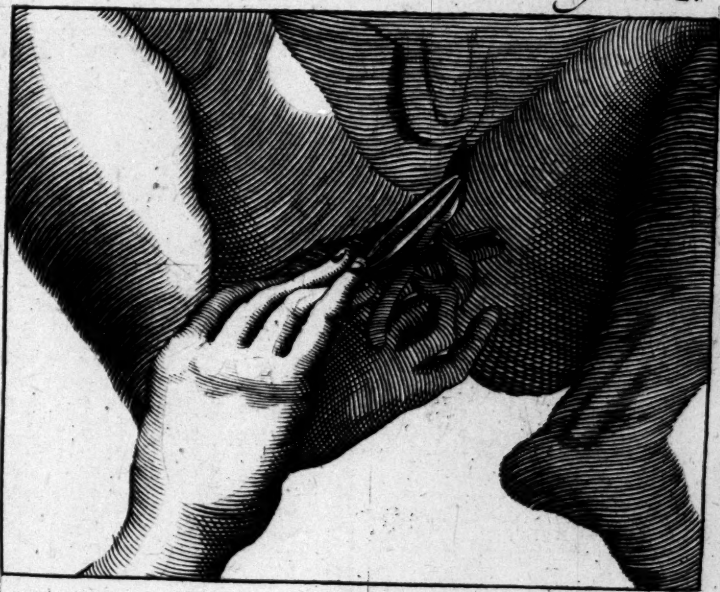
tive Mind, and not talk (remembering that all questions put to him at that time are impertinent) and then having passed the *Bill* of the *Conductor* into the furrowing of the *Catheter*, he must hold them fast, and be sure to keep the *Bill* of the *Conductor* always in, sliding it along and under the furrowing, and thrusting upwards; by which means it will be certainly introduc'd into the Bladder; and then holding it with his **Right Hand**, the *Catheter* must be disengaged from the *Conductor*, (by turning it to the Left) and gently drawn out of the *Penis*. A certain sign that the *Conductor* is in Bladder, is the Emission of Urine (if there be any in the Bladder) along the *Conductor*. When the *Conductor* is in the Bladder, and the *Catheter* drawn out, it must be held with the Left-hand, and a convenient

CHAP. pair of *Forceps* be thrust along the  
XIV. same *Conductor* with the Right-  
 Hand, *as this Figure shews.*

Tho' the *Conductor* be put into the *Bladder*, yet it may be forced out again by the Patients struggling, which must be prevented, by causing some to press upon his Shoulders, and others to hold him fast by the Hands and Feet, the *Lithotomist* in the mean time, holding the *Conductor* fast with his Left-hand, must not forget taking great notice, whether any part of it which he has introduc'd, come out again; for if he perceive it does, he must not thrust it forwards, to make it enter again, least a space be made between the *Bladder* and the *Rectum*, nor yet wholly draw it out, because perhaps it may still be in the *Bladder*; but taking a pair of *Forceps* of an indifferent size, rather



*Page 182.*

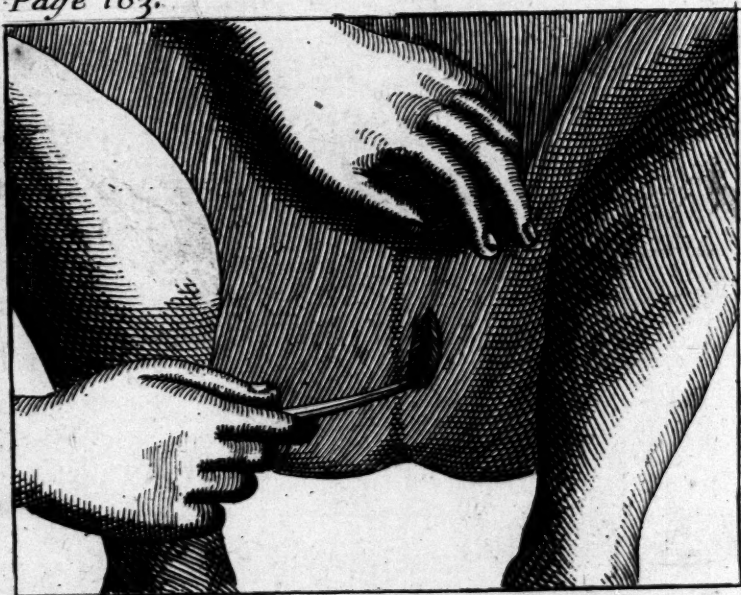






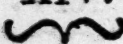


Page 183.



ther small than great, he must pass them along the *Conductor* without forcing, and if he finds any resistance, the *Conductor* must be drawn out ; after which if he cannot but with difficulty open the *Forceps*, he may be sure that they are not in the Bladder, and then without speaking, they must be taken out, and the *Lithotomist* must take the *Button* with his Right-hand, and lifting up the *Scrotum* with his Left, must pass it into the Wound, turning it towards the *Penis*, and conducting it upwards to the Bladder, as this Figure sheweth.

The *Button* being blunt, hurts not the Parts in passing, and when it is in the Bladder (which may be known, by its being easily to be turned every way ) the Stone is softly to be search'd for, by gently jogging and moving the Instru-

CHAP. ment ; and when it is felt, the  
XIV.  *Lithotomist* must take the *Button* in his Left-hand, and conduct the *Forceps* with his Right, close upon the *Button* into the *Bladder*, See here the *Figure* of it.

If a crooked pair of *Forceps* be introduc'd, the *Bill* being turned towards the *Penis*, the *Rings* or *Handle* must be rais'd more than if the *Forceps* were strait, as may be observed by the Difference of this *Figure* from that of Page 182 a-foregoing, which represents the strait *Forceps* introduced upon the *Conductor*, with the Right-hand bending lower and nearer the left.

The crooked *Forceps* are made use of, when the *Stone* is thought to incline near to the *Groin*; but most commonly the strait *Forceps* are sufficient, and both the one and



Page 184.





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and the other ought to be laid upon CHAP.  
the Line of the *Button*, so as to XIV.  
touch on both sides.

When the *Forceps* are in the Bladder, they must be open'd to dilate the Passage, and then having joined the Rings almost together, they must be gently turn'd and mov'd every way (without closing the Teeth, for fear of offending some part of the Bladder) to search for the Stone; when the *Operation* is so far perform'd, the Patient's *Thighs* may be brought a little nearer together, and not be kept at such a distance as they were before.

It is to be observed, that as often as one would change the *Forceps* or introduce them, there is a necessity of making use of the *Button*, except when the *Conductor* is introduced immediately after the *Incision* is made, as before taught.

But

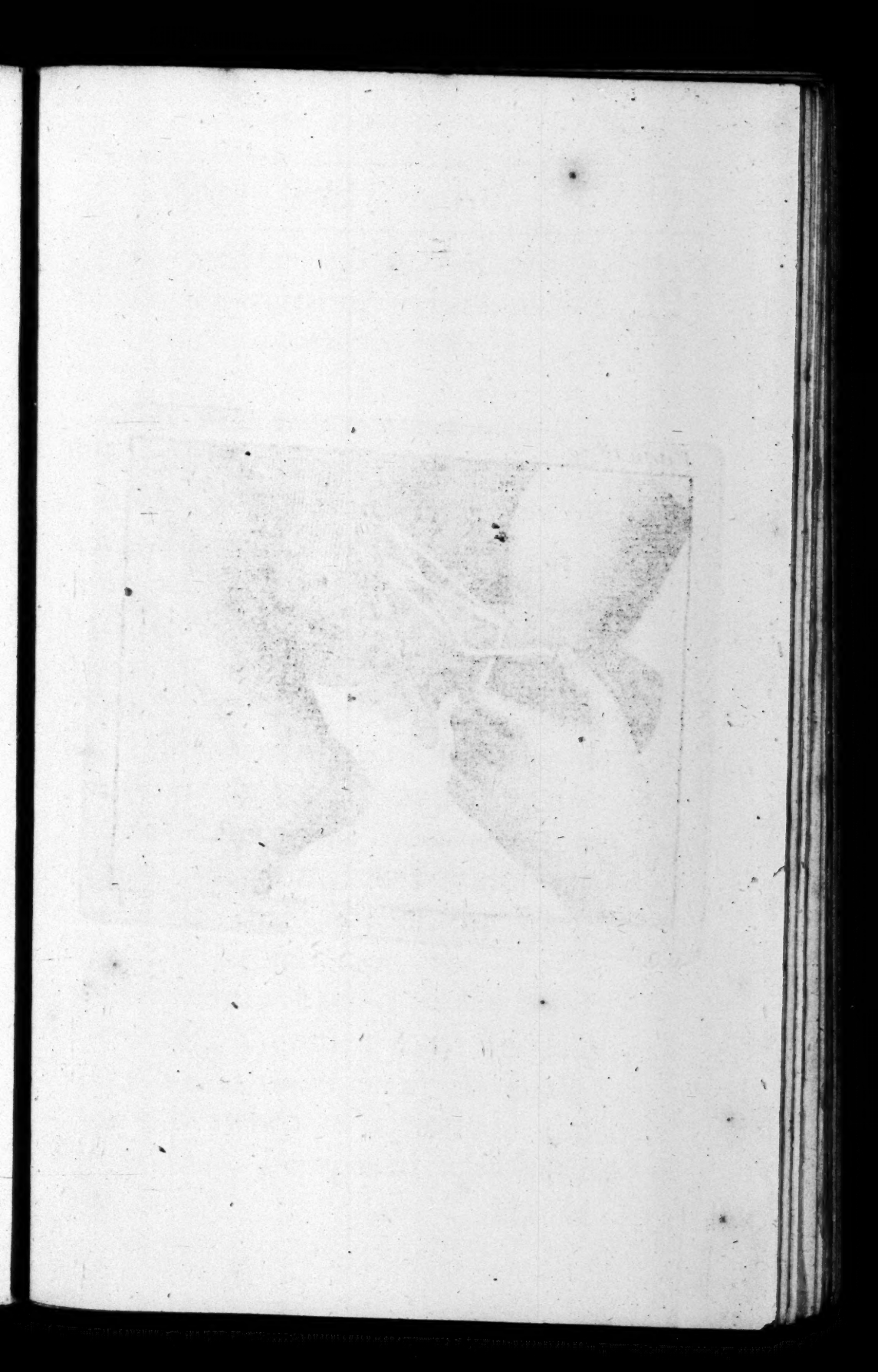


CHAP.

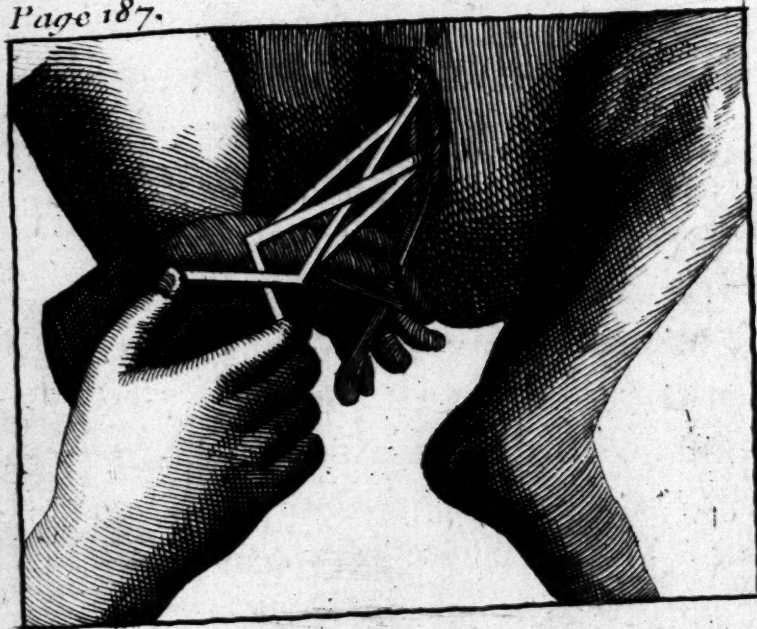
XIV.

But if after the *Conductor* is drawn back, the *Lithotomist* cannot introduce the *Button*, it will be necessary to take the same furrowed *Catheter*, or one somewhat smaller or less, and introduce it gently into the *Urethra* again, without turning of it any way, lest it should come out at the *Incision*, and when it is passed into the *Bladder*, the furrowing of it must be searched for, with the *Bill* of the *Conductor* thro' the *Wound*, that so the *Operation* may be more successfully continued than before.

When the *Conductor* is in the *Bladder*, if it be fear'd that the passage is not wide enough, a close *Dilatatory* must be introduced along and upon the *Conductor*, and without turning it any way, only bringing the *Branches* of the handle nearer to one another, the bottom  
of



Page 187.





of the *Incision* will be dilated in length, as much or as little as it is thought fit, in this manner.

CHAP.  
XIV.  
~

This *Dilatatory* is never us'd unless necessity require it, and after it is taken out, the *Conductor* being left in, the *Lithotomist* must take a close pair of *Forceps*, and slide them into the Bladder to search for the Stone, as before.

And if the Stone is not readily felt, the *Forceps* must be mov'd gently to the Right and Left, up and down, near the *Sphincter* of the *Rectum*, and sometimes must be turned so that one of the *Rings* may be higher than the other, thereby endeavouring to lay hold of the Stone, which may be flat, or lye hid at one side of the Bladder; and when it is found, the *Forceps* must be opened with both Hands

CHAP. Hands, to gripe and lay hold of it.  
XIV. The *Lithotomist* is sometimes so  
fortunate, as to take good hold of  
the Stone in a small time; it is  
easily known whether the Stone is  
in the *Forceps* or not, because if it  
is, the *Rings* cannot be made to  
meet again, and some *hard Matter*  
will be felt betwixt the Teeth:  
This is the surest sign, for very  
small Stones may be taken hold of,  
about the middle of the *Forceps*,  
where they are most bent, without  
hindering the *Rings* from meeting  
together, but still some hardness  
will be felt: In the Year 1684 as  
I was performing the *Lithotomical*  
*Operation* upon one Mr. Francis  
*Waldegrove* in *Suffolk*, Aged 45, it  
hap'ned, that having fix'd one large  
Stone in the *Teeth* of the *Forceps*,  
and drawing the *Forceps* towards  
me near the *Wound* (as I com-  
monly

monly do, because if the Stone shou'd happen to break, I might then prevent the *Fragments* returning into the Cavity of the Bladder again) having my two Fingers in *Ano*, I felt another small Stone which I forced also into the *Forceps* near the middle, and thus extracted both Stones at once from my Patient, who is still alive and well known among the *Quakers*.

I also took two Stones from Captain *Williams*, Keeper of the Goal in *Warwick*, on the 19th of September 1698; I extracted the biggest first, and the least afterward, taking hold of it with the middle of the *Forceps*; he is now alive and well.

When the Stone is laid hold of, the *Lithotomist* must not at first pull towards him, but turn the *Forceps* gently to the Right and Left, (holding them with one or both



CHAP. both Hands, according to his con-  
XIV. veniency) that so he may know  
if the Stone lye right in the *Teeth*,  
and disintangle it from among the  
*Plicatures* of the Bladder, after  
which, he must draw it towards  
him, but without Violence: Be-  
fore 'tis drawn out, the *Rings* of  
the *Forceps* must be rais'd and  
lower'd alternately, to make the  
Stone slide with greater ease. If  
the crooked *Forceps* are us'd, the *Bill*  
of them must be turn'd towards the  
*Pubes* just at the Passage of bringing  
it out, and the *Rings* be very near  
the *Penis*; and that one may not be  
mistaken and turn the *Bill* downwards,  
it would be necessary to put a mark  
upon one of the *Rings* of the *Forceps*.  
When the Stone is in the *Forceps*,  
especial care is to be had, not to  
turn it quite round, because if the  
Stone be big or uneven, it will  
much

much *Contuse* the parts of the Blad-  
 der: If the Stone be soft, it breaks  
 and moulders, and the *Forceps* easily  
 shut, but yet one feels as it were a  
 heap of Sand, and then the Rings  
 are not to be brought wholly to-  
 gether, because there would but a  
 small matter of *Gravel* be drawn  
 out, and the parts of the Bladder  
 might be hurt.

CHAP.  
 XIV.

The *Forceps* with what is be-  
 twixt the Teeth, must be drawn  
 out, and this is to be reiterated,  
 conducting the *Forceps* upon the  
*Button*, as often as shall be judged  
 necessary; and then a *Tent* or  
*Pipe* is to be introduced, as shall  
 be shew'd in the following Chap-  
 ter.

When the *Lithotomist* judges the  
 Stone to be flat, and of the shape  
 of an Almond, he may endeavour  
 to make one of the Teeth of the  
*Forceps*

CHAP.  
XIV.

*Forceps* slide under it, and the other above; though commonly the Stones are taken side-ways, and when it is taken hold of, he is to turn the *Forceps* again, so that the thickness of the Stone may answer to the length of the *Incision*.

Sometimes a Stone of the shape of a large Hens Egg, is taken hold of by its two ends, which may be guess'd by the great distance then is observed to be betwixt the *Rings* of the *Forceps*, nay one may see it when the Stone is near the Passage; and then the *Forceps* must be thrust back into the Bladder, and be a little open'd that the Stone may lie loose in 'em, and then it will turn without fail, and may be held fast by its thickness side-ways, and thereby the Passage will be less dilated in drawing it out: If the *Lithotomist* can't



can't hold the *Forceps* fast enough CHAP. XIV.  
he may wrap the *Rings* in a Napkin that his Hands may not slip.

If the Stone adheres and sticks very close, it is better to delay *Extracting* it for some time, because *Suppuration* contributes to the Separation thereof.

When it is excessively big, it is better to let it alone than to *Expose* the Patient to evident Death, especially if Age and other Circumstances are contrary to the *Operation*.

*Fabritius Hildanus*, in his *Treatise de Lithotomia Vesicae*, P. M. 114. has some Figures (which he borrow'd of *Petrus Francus*) of *Forceps* that are very convenient to break the Stone when it is too large to be extracted; and *Beverovicus*, my Countryman, advises to break a great Stone  
O with

CHAP. with *Forceps*, whose Teeth resemble  
XIV. the Teeth of a great Saw.  
The foremention'd *Hildanus*, when he did not break the Stone, made use of a long Silver *Tent* or *Pipe*, perforated and open at the end, to hinder the Stone from falling on the *Sphincter*, that so the Patient might make Water.

When all the Stones have been Extracted in an *Operation*, it is not needful to introduce a *Tent* or *Pipe*: Nevertheless there are some *Lithotomist*, who always use them to void Clots of congealed Blood. I do not use them because Blood will make its way *per Penem*, or by the Wound: But a *Tent* may sometimes be useful, when there is an *Ulcer* in the Bladder, that *Injections* may be the more conveniently made into it.

CHAP.

## C H A P. XV.

*Of the Difficulties happening in this Operation.*

**A**N *Operation* is call'd hard and laborious, when by a skillful Man it is not perform'd in a short time. In such a case the Patient is not to be held in Pain until the Stone or all its parts be extracted. Sometimes it so stops the Passage, that the *Conductor* or *Forceps* cannot enter without great difficulty; and therefore an Expert *Lithotomist* must not scruple to take out his *Instruments*, and with the *Button* or his *Finger* thrust back the Stone into the Bladder; and afterwards make use of the *Button*



CHAP. and *Forceps* to continue the Opera-  
XV. tion.

It many times happens, that after the Stone hath been laid hold of, it escapes and mounts up again, because the *Forceps* give way, or the *Teeth* are not good, or the Stone is monst'rous in respect to the Passage, or breaks when it is held too strait, or because it so adheres to the Bladder, that it cannot be easily Extracted.

These Circumstances are to be observ'd very exactly, and the *Lithotomist* ought not to be more careful in *Operating*, than in considering the Strength and Age of the Patient, with the time that he has been under the *Operation*, keeping him rather too short a time than too long, lest the Patient being made to endure too much be surpriz'd by *Death*:  
But



*Page 197.*





But if, after the *Operation* hath been CHAP. XV.  
methodically carried on, nothing is  
Extracted; because there was no  
Stone in the Bladder, or that the  
Stone is small, or if Fragments re-  
main, he may take the *Button*  
with a *Scoop*, by the small or middle,  
and introduce the *Scoop* or *Spoon*  
into the Wound, and so endeavour  
to Extract whatever he finds, and  
this having been two or three times  
reiterated, he ought to make use  
of a *Cannula* proportionable to the  
Subject, and mounted according  
to Art.

For introducing it, he may make  
use of the *Button*, put into the *In-  
cision*, and having dipp'd the end of  
the *Cannula*, or *Tent*, in *Oyl*, he may  
conduct it along the *Button* even to  
the Bladder, *in this manner.*

CHAP.  
XV.  


The ends of the piece of Lin-  
nen wherewith the Tent is mounted,  
may be ty'd to the *Girdle* that is  
made with the *Bandage*, one before,  
and the other behind. Next Day  
or some Days after, the *Tent* is to  
be taken out, and if there remain  
still somewhat in the Bladder, the  
*Lithotomist* must endeavour with the  
*Hamulus* or *Hook*, or with the *Scoop*  
of the *Button*, or with the *Forceps*  
conducted by the *Button*, to extract  
it while the Patient lies a Bed; or  
otherwise, he may be placed upon  
a Servant's Lap, or upon a Table  
as at first, yet without using of  
*Ligatures* or *Scarfs*, because then the  
Patient being weak, it would put  
him into too great fear.

When the *Fragments* are but mo-  
derately big, they may be Extract-  
ed a Bed; the *Tent* must be left in,  
until the *Lithotomist* is certain, that  
there

there is nothing more remaining to be Extracted, which may be known, if he observes what came out during the *Operation*, or afterwards with the *Medicines*. CHAP. XV.

After the *Tent* is taken out, a *Catheter* crooked at the end may be introduced, or a big *Wire* may be put through the Cavity of the *Tent* without taking it out; and then by several little jogs or motions, search may be made gently without Pain; a Feather may also be us'd to clear the *Tent* of *Blood*, *Slime*, or *Purulent Matter* that is form'd in the Bladder. The Injection of Barley-Water (or *Mucilag. Sem. Cydon. Psyllii cum Aq. Rosar. Solan. An. q. f. in quibus dissolv. Trochis. Alb. Rhas. M. F. Injectio*) is proper to be us'd, and after the first Day the *Lithotomist* may

O 4



CHAP. may gently press the *Belly* with his  
 XVI. Hand in the time of Dressing.

## CHAP. XVI.

*Of the Symptoms of Lithotomy.*

THE *Symptoms* are either Concomitant or Subsequent Accidents that accompany the Operation, and are *Hemorrhage* or *Bleeding*, the length of time, which makes it to be called laborious, the Bruising of the Parts, or Breaking of the Stone, the difficulty of Extracting it, or the impossibility of it. But with such a Case I met but once in 40 Years. The Patient was one Colonel *Alford*, a resolute Gentleman, the Stone proved inextractible : Mr. *Sutor* the *Lithotomist* was

was equally concerned with me, <sup>CHAP.</sup>  
we made the Wound as large and <sup>XVI.</sup>  
the *Extension* or *Dilatation* as wide  
as the Parts would bear, we had  
the best of *Surgeons* present, of  
which Mr. *Layfield*, who is now alive  
was one; there were also *Physicians*  
of Note, the expert Dr. *Gibbons*  
came in afterwards, to whom I am  
much obliged; in short after we  
had done what we could, we were  
forced to leave off, and the Patient  
died that Night, he was open'd  
afterward, and the Stone was Py-  
ramidal and Monst'rous; it is kept  
in the Family.

Sometimes we meet with such a  
number of Fragments as cannot be  
Extracted, because of their bigness,  
or weakness of the Patient: Some-  
times also nothing is found in the  
Bladder.

If

CHAP. If great Care be not taken, a  
 XVI. *Lithotomist* may possibly by thrust-  
 ing the *Catheter*, pierce through the  
 Bladder.

The Symptoms, that commonly follow the *Lithotomical Operation*, are a painful *Tension* of the *Abdomen*, *Retention* of *Urine*, *Watchings*, *Inflammation* of the *Parts affected*, *Vomiting*, *Diarrhæa*, *Worms*, *Ecchymoses*, *Fluxions*, *Abcesses*, *Excoriations*, *Itchings*, *Ulcers*, *Fevers*, *Consumptions*, *Convulsions*, *Delirium*, &c.

But these Symptoms do not happen to all Persons, and but very seldom all of them to any, some Patients having very few, and others many, according to the Circumstance and Difficulty of the Operation, &c.

The *Tension* of the *Abdomen*, is caus'd by an *Inflammation* that attracts a *Fluxion* when the *Ligaments*,  
 that



that keep up the Bladder, are CHAP. XVI. strained: The Retention of Urine is occasion'd by Coagulated Blood, or Inflammation of the Parts: A Diarrhœa or Loosness and Worms in Children, proceed from abundance of Phlegm and putrid Humours.

An Ecchymosis is an effect of Extravasated Blood: An Abscess is produced by a Collection and Continuance of Humors in the Interstices of the Parts: A great and long Suppuration, by the quantity of the Matter, whereof the Abscess is formed, or by an Ulceration in the Kidneys, or the Liquefaction of the Humors of the whole Body, of which, part Suppurate, whilst the rest is dispersed and expell'd by Transpiration, or a Looseness, which at the same time often causes a Marasmus or Extenuation of the whole Body: An Ulcer of the Bladder

CHAP. *der* is caus'd by *Contusion* and *Sup-*  
 XVI. *puration* of its Parts, which excites  
 ~~~~~ the running of *Purulent Matter* by  
 the *Penis*, or *Wound*: *Fungous Carno-*
sities by superfluity of ill *Blood*:
Excoriations and *Itching*, are the effects
 of the sharpness of *Urine*, or too
 strait *Bandage*: *Putrefaction* of
 the *Ulcer*, comes from *Corruption* of
 the *Humors*, and the *Air*, &c.

There are other *Accidents* occa-
 sion'd by *Bruising* or *Dilacerating*
 the *Nerves*, (which pass through
 the holes of the *Os Sacrum* and are
 distributed and Common to the
Sphincters of the *Bladder* and *Anus*)
 by the *Forceps*, or by the *Asperities*
 of a Great and Rough *Stone*, es-
 pecially when the *Operation* hath
 been hard and laborious.

There sometimes happens after
 the *Operation*, a *Syncope* or *Fainting*,
 which is occasioned by a great
 Flux

Flux of Blood and the loss of Spi-
rits. Convulsions happen either by
Vomiting, Diarrhæa, or Hemor-
rhage, which hinder the Nerves
from receiving a sufficient quan-
tity of Spiritus: A Delirium su-
pervenies, when there has been
so great a Dissipation of Animal
Spirits, that the Brain retains not
enough for it self, or for supplying
the whole Body with a quantity suf-
ficient for performing the Functions
of its several parts.

These Symptoms have their Causes,
and Diagnostic and Prognostic Signs:
Some are the Cause of the Signs
of others, and all the Symptoms in
general are caus'd by Pain, Fever,
Hemorrhage, Contusion and Dilace-
ration of the Parts.

The Prognostics are taken from
the time, the Violence, and the
State of the Patient, in which the
Accidents happen.

The

CHAP.

XVI.

CHAP.
XVI.

The *Symptoms* that appear at first, are not so dangerous, as those that last long or happen in a *Cacochymic* Body, which then are more to be feared.

A *Lithotomist* who is expert in performing the *Operation*, will avoid many *Concomitant Symptoms*.

There are some *Blades*, who have the *Knack* of feigning that they have extracted a *Stone*, and Convey one, though they have found none: One Mr. *Morion*, a *French Merchant*, told me about 34 or 35 Years ago, when I was but newly come to *England*, that such a *Spark* was caught in *Paris*, near the very door of a *Patient* whom he had served that trick, and was Executed quickly after by order of the *French King*.

The *Symptoms* that follow the *Operation* are (either by themselves
apart,

apart, or many together according to their Nature) to be corrected and allwaged by various and proper Medicines. CHAP. XVI.

The first care must be to Mitigate Pain by *Anodines*, *Imbrocations* and *Fomentations*: A *Hæmorrhage* is sometimes to be feared, wherefore I always leave a careful Servant, to apply *Astringent Topicks* with *Pledgets* and *Compresses* dipt in *Acetum* & *Aqua commixt.* and to make a good *Ligature* to keep on the Dressing for 24 Hours, except there should be a new Eruption of Blood, for then recourse must be had to fresh *Astringents*, &c.

CHAP.

CHAP.
XVII.

CHAP. XVII.

Of the Method of Curing those that
are Cutt, and removing their Symp-
toms.

THE Looseness and Diarrhæa
may be cured by these or
the like Medicines.

R̄ Rhabarb. pulv. Confect. Fracastor
an. ʒʒ M. F. Bolus sumat. hora somni.
Superbib. haust. seq.

R̄ Aq. lact. alexiter, Cinamon. hord.
an. ʒi. aq. Cinamon. fort. ʒii. Syrup.
de Cichor. cum Rhabar. ʒiii. M. F.
Haustus.

If it be a Child the following
will be serviceable.

R̄ Rhabarb. ʒʒ. Aq. Cerasor. Ni-
gror. ʒiii. F. Infusio detur. Cochleatim.

And afterwards give this Deco-
ction. R̄ C.C.C.

℞ C.C.C. ʒβ. Nuc. Moschat. Con-
tus. ʒβ. Coq. in aq. fontan. q. s. sub
finem add. Crust. Panis albiss. ʒiii.
Colatur. ℥i. add. aq. Stephan. ʒx.
Sackar. Cand. alb. q. s. M. F. De-
coctum; of which let the Patient
Drink often.

CHAP.
XVII.


If the Looseness continues, add.
Laudan. liquid. gut. ii. ad. iii.
more or less to every Draught of
the Decoction Album, and continue
it till the Looseness leaves the Pa-
tient.

To Cure Worms prescribe as
follows.

℞ C.C. Corallin. an. ʒi. Sem. Ze-
doar. pulv. ad Vermes. an. ʒii. Sat.
absinth. occulor. cancr. ʒβ. M. F. Pulv.
N^o viii. of which let the Patient take
one twice a Day in any proper
Vehicle.

CHAP.

XVII.

 Sometimes some few Grains of *Calomel* may be given, which will totally destroy the Worms.

The *Ecchymosis* may be taken of, by applying *Spiritus Vini*, *Theriaca Andromach. commixt.* or *Spiritus Vini Camphorat.* or *Emplastr. de Cymino*, putting fresh *Sem. Cymin.* stamp'd with a little *Ol. Rosar.* and laid up-on the *Plaster*, but not spread with an hot *Spatula*.

Fluxions and moderate *Tumors* are to be dissipated by *Resolutives*, and *discussing Emplaisters*, *Comfortative Cataplasms* and *Anodyns*, according to the Degrees of the Hurt and the Rules of Art.

Abscesses are commonly formed above the *Incision*, and many times pressing the head of the *Tumor* with one Finger, and the sides with the others, the *Purulent Matter* will be evacuated by the *Wound*; but if it be

be perceiv'd, that the Skin is very thin, and the *Matter* ready to burst forth, they must then be open'd to the very bottom of the *Sinus*, and the Cure be performed according to Art.

CHAP.
XVII.
~

Deterfive Injections must be us'd to *Mundifie* and cleanse the Bladder, and *Emulsions* given to the Patient, that the *Purulent Matter* may the more easily be Evacuated.

Before we treat of the Cure of *Fevers* that may happen after the *Operation*, it will be necessary to say something about dressing the Wound; for that being carefully done, proves very material in abating a *Fever* which here is *Symptomatical* only.

The first thing therefore to be observ'd after the *Lithotomist* has successfully perform'd the *Operation* (whilst the Patient is still in the

CHAP. XVII. Posture, and the Assistants are with all Expedition clearing the *Ligatures*) is, either to inject into the Wound proper warm *Mundifying* Medicines, or to apply Flannel-stuffs, dipt into, and gently wrung out of, such Remedies made hot, as the *Lithotomist* thinks most proper to prevent or abate a violent *Inflammation* and afterwards a large Plegdet, on which is spread proper Astringents, must be put upon the *Incision*, applying over that a *Compress* of Linnen, four or more times doubl'd, and about four Fingers in length and breadth, which being gently held on by a Man with one of his Hands, he must with his other Arm, take the Patient about the Body (the *Ligatures* being clear'd) and with assistance of others carry him to Bed, except the *Lithotomist* thinks

thinks it necessary to have him ^{CHAP.} set in a warm *Stiptic-bath*, which ^{XVII.}
I use to Children (when the Stone is extracted by *Apparatu Minori*, without breaking or bruising the Parts) of whom I have Cured Scores, by the first *Intention*.

When the Patient is carried to Bed, a *Truss* with four Heads, made suitable to the Patient, must be put about him near his Hips, that so the two superior Heads or Straps, call'd *Twins*, may serve for a Girdle, letting the other two Heads hang down, that so after the Wound is dress'd they may cross one another just upon the *Incision*, (without stopping the *Anus*) to keep on the Medicines, &c. by a slight Compression, after which they must be tied to the Girdle near the Groin.

CHAP.

XVII.

But before the two superior Straps of the *Truss* are tied together to serve for a Girdle, *Imbrocation* must be made upon the *Belly* and *Scrotum*, &c. with warm *Ol. Rosar.* & *Ol. Chamomil.* to prevent or Cure the *Tension* which is painful to those Parts; an *Astringent Plaister* must also be apply'd to the *Belly*, and over that a *Belly-Cloath*, soaked in warm *Oxycrat*, and then the two superior or upper Straps of the *Truss* must be tied together towards the Patient's Right-side, the one of them passing under the *Collar*; and after that, the *Compress* and *Pledget*, which were put upon the *Wound* immediately after the *Operation*, must be taken off, and if there be a *Hæmorrhage*, *Astringent-Powders* and *Pledgets* are to be applied; if there be no *Hæmorrhage*, an indifferent thick *Pledget* covered with *Astringents*

gents as before, must be put upon the *Wound*, and over it a Triangular Plaister covered with *Astringents*, and then a small square *Compress* dipp'd in warm *Oxycrat*, must be put upon that, and all be kept on by the ends of the *Truss*, exactly crossing one another, and tied artfully to the Girdle as above-mention'd; and during the whole time that the Bandage is making, *Belly-Cloaths* dipp'd in *Oxycrat* must be applied to the Patient.

Great care must be had that the ends of the *Bandage*, or *Truss*, nicely keep the dressing upon the *Wound*, the *Scrotum* also ought to be kept up with a proper *Truss*, and the *Thighs* must be made fast and kept at but a little distance from one another, with a Garter or *Thigh-band* tied just above the

CHAP. *Knees*, with the Knot on the out-
XVII. side of the Thighs.

If it be a Woman from whom a Stone is Extracted, whether it be by *Dilatation* (which I always found to be the best way) or *Incision*, the same Dressing must be put upon the Belly as to Men (Bathing also with *Astringents* in *Semicupio*,) and the Pledget covered with *Astringents* must be put upon the *Orifice* of the *Urethra*, and over that, a *Compress*, which must be kept on by the *Truss* like a double T, of which a Girdle must be made as with the other *Truss*, and the two Ends or Tails of it passing betwixt the Thighs, and crossing upon the Dressing, will hold it fast, and press it as little as one pleases. When the Patient has a mind *Emit-tendi Urinas*, the Bandage must be taken off: The Female Sex is not subject to near so many Accidents

as the Male, and therefore are much
sooner cured.

CHAP.

XVII.

In Men the first Dressing may be removed within 12 Hours after Application; and every time the Dressing is renew'd, *Imbrocation* with the same *Astringent*, and the same Belly-Cloaths, must be us'd at least for four or five Days; if the Belly be swell'd or pain'd *Fomentations* with *Vini Auster. in quo Fol. Rosar. Rub. incoct. fuerint.* may be successfully us'd, and sometimes it is necessary they should be reiterated four or five times in a Day.

The Wound may be dress'd as the *Lithotomist* sees convenient with *Linimentum Arcaei* either by its self, or with one Dram of *Bals. Sulph.* added to every Ounce of it, which ought to be half melted, to make it Penetrate the more, applying it with a Feather, and as gently

CHAP. ly as may be, introducing it to the
XVII. very bottom of the Wound, and
then a little *Fledget* dipp'd in the
same *Liniment* may be applied upon
the Lips of it, and a *Triangular*
Plaister, soaked in warm *Ol. Rosar.*
using a *Compress* and *Truss*, moisten'd
with warm *Oxycrat*, and a clean
dry *Bandage* as at first: For the
following Days the Patient may be
dress'd twice every 24 Hours, duly
changing the Dressings, except that
of the Belly, which may serve for
two Days, and every now and
then the Patient must be made
dry; which ought particularly to
be done, when fresh Dressings are
apply'd, keeping the *Wound* clean
to avoid a *Gangrene*: It must be
dress'd with all speed and diligence,
and kept open as little as may be,
and a Fire must always be kept in
the

the Room to correct the badness or coldness of the *Air*.

CHAP.
XVII.
~

After five or six Days there will be no need of *Oxycrat*, nor *Astringents*, but only of a dry Belly-Cloath; and in the *Incision* three or four drops of *Linimentum Arcae* introduc'd with a Feather, and a flat Pledget dip'd in the same upon the Lips of the Wound. *Balsamum Peruvianum* and *Copava* are also Sovereign Remedies for *Agglutination*; that of *Copava* is good from the beginning to the very end. Some make use of equal parts of *Linimentum Arcae* and *Olium Ovarium*.

The truly Honest and Ingenious Surgeon, Mr. Page, when alive furnish'd me with the following Digestive, which Contracts large Wounds of this Nature strangely:
R̄ Ung. e Gumm. Elemn. ʒi. Tereb. Venet. ʒiii. Ol. Hypericon. ʒii. pulv. Myrrh.

CHAP. Myrrh. Aloes an. ʒi. Mastich. ʒiʒ. Sang.
 XVII. Dracon. Bol. Armen. an. ʒʒ. Spir. Vin.
 Rectif. q. s. M. F. Ung.

There are several other Compositions which may be us'd as the *Lithotomist* sees proper: In Hospitals they have the Green Balsam which is made of *Ol. Lini Tereb. Venet.* and *Virid. Æris*, which also is good. The success that attends them is alike, provided the Operation has been fortunate, and no bad accidents supervene.

When the Liniment, or Ointment has been introduc'd with a Feather, put on a *Pledget*, and a *Plaister*, and a dry *Truss* to bear up the *Scrotum*, with a Compress and Bandage upon the Wound, as has been described before.

After the first Days are over, the Bandage upon the Wound may be press'd, a little harder than in the begin-

beginning, and it is fit to alter the posture of the Patient, laying him on his Right or Left-side, with a Pillow under his Buttocks.

The Lips of the Wound must be kept equally rais'd. by help of little narrow *Compresses*, that the *Buttom* may Consolidate, before the *Cicatrice* be made, when it is certain that the *Buttom* is consolidated, then *Desiccatives* must be us'd, and when the Patient has occasion to make Water in his Urinal, he may with his Hand press a little upon the Dressing, that he may do it the more freely. If any *Fungus* grows, it must be kept down with *Lap. Vitriol. Lap. Infernal. Caustic. Lunar. Alumen. ust.* or any other as the *Lithotomist* shall think fit to apply, or order to be applied. And thus some are perfectly Cur'd in 30, some in 40 Days; I have had

CHAP. had Children walk about the Room
 XVII. in 12 Days.

'Tis Prudence in a *Lithotomist* to observe the Alterations that happen to the Patient, and to change his Method of Cure *pro re nata* as well by *Diet*, as by *Chirurgery*, and *Pharmacy*. In *Diet* until the 7th or 8th Day he must Abstain from Wine, unless he be very weak; he must drink Almond Milk, Ptisane, and Small-Beer, and Eat Broaths, Watergruel, Panadoe, &c. ordering his Food to be made stronger gradually; *Chirurgery* is necessary when Letting of Blood is to be Reiterated, *Abscesses* and *Sinus's* to be open'd, places where there is a disposition to *Putrefaction* to be Scarified; sometimes *Scissars* are made use of to Clip off *Membranes* and other parts, that are wholly corrupted: And the Medicines are changed

changed to discuss *Tumors* or ripen *CHAP. XVII.*
Abscesses: *Ulcers* of the *Scrotum*
and the *Bladder* must be cleansed
by *Injections* and other *Medicines*
that resist *Putrefaction* and *Mortifi-*
cation. *Extraordinary Symptoms* some-
times appear one before another,
and sometimes many together
making a *Complication*.

I come now to speak of *Fevers*
which often happen after *Extract-*
ing the *Stone*, and which are com-
monly cured by *Letting of Blood*,
which is good if the *Patient* has
not lost much in the *Operation*, and
has *Strength* to bear it. It may
be askt how comes it to pass that
sometimes a little *Intemperance*
gives rise to the most *Dreadful*
and *Fatal Symptoms*, and *Fevers*,
when perhaps at another time, the
greatest *Excesses* go unpunished
without?

Men

CHAP.
XVII.

Men differ much in their Meats and Drinks; some always Indulging themselves in Luxury and Excesses, esteem nothing too Rare, too Rich, or too Dear, to Pamper their Bodies, and to please their Palates, and hence will have *Fevers*; whilst others, bending under a loathed Poverty, are necessitated to satisfy their craving Stomachs, or thirsty Throats, with what their wretched conditions can acquire.; and from the badness thereof will have *Fever*, yet supposing the state of Health and Sicknes to be the same, it will be no easie Undertaking¹ to distinguish between the Blood of the Voluptuous Beaux and the Miserable Peasant.

The very Air that is so Essentially necessary for Life, that without it we can neither Live, Move, or have a Being, has sometimes
very

very different effects upon Hu-^{CHAP.}
mane Bodies, and yet has no per-^{XVII.}
ceived change in its Sensible Quali-
ties; as fatally appears when it is
miserably experienced to be the
unhappy Medium that conveys
those Poisonous Particles into the
Veins of Men, which like the de-
stroying Angels kills Thousands by
Pestilential Fevers. And yet there
is no Sense so exquisitely nice that
can distinguish them, nor no skill
to separate or divide them, nor no
Judgment so strong, nor Reason
so profound as to demonstrate how
these are made, or from whence
derived: Or how directly they
exert their dreadful, altho so very
differing effects.

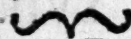
Restlessness is conquer'd by cool-
ing *Decoctions*, *Pacific Emulsions*, and
Paregoric mixtures, after the first
Days.

Q

The

CHAP.

XVII.



The *Inflammation of the parts* after *Suppuration*, is extinguished by the *Ceratum Galen*, or by *Nutritum*, which is an incomparable Ointment as well in that, as in many other cases: Fragments and small Stones are voided with the *Urine*, and by the *Injection* of warm Barley Water, or they are extracted with the *Hamulus* or *Hook*, *Forceps* or *Scoop* of the *Button*. The too great retention of *Urine*, is cured by passing the *Womans Catheter* into the *Wound*, and then by a *Tent* or *Pipe* left in it for some Days; *Gripings* and *Looseness* are stopp'd, by *Anodyn Glysters*, by *Liquid Laud. cum Spirit. Sulphur. commixt.* or by drinking of proper *Ptisane*, &c.

If *Excoriations* are spread, the Patient may be drest without a *Truss*, only putting an *Adhesive Plaster* over the Medicines which are laid to the *Wound*. The

The same thing is to be practis'd ^{CHAP. XVII.} when the *Scrotum* or *Testes* are much swell'd and in Pain, and on that occasion *Anodyn* and *Emollient Cataplasms*, &c. spread upon Linnen-Cloath, cut in the shape of the Plaister for the *Scrotum*, are to be made use of, with a *Bandage* or *Suspensory*, which must be apply'd as in other Distempers of the *Scrotum* or *Testes*.

Persons that are Cut for the Stone, when they are kept lying a great while in Bed, are subject to other Accidents; some *Lithotomists* keep their Patients upon their backs all the while, till their Wounds are cur'd, this is the way Dr. *Cyprianus* and the *Parisian Lithotomists* order their Patients, which I do not, because by experience I have found, that the best way after they are Dress'd, to keep the *Urine*

Q 2

from

CHAP. XVII. from the Wound, is to give leave
 to the Patients to lie either on their
 Right or Left side, with a Pillow
 under that side they lye on, and
 thus they are cured sooner.

Fainting, Convulsions, and Vomiting
 go often Hand in Hand, but
 the last appears more frequently
 than the others. The *Vomiting* is
 Cured according to the various In-
 dications, sometimes the Stomach
 may be ill it self, then we use
Stomachics: Sometimes there is a
Vomiting per Consensum partium which
 must be Cured quite in another
 manner, thus as the Causes differ,
 the *Physician* must alter his method:
 If the Stomach be disordered *Ri-*
verius his Medicine *Cum sale absinthii*
 may do well, or a *Julep* with *aq. Menth.*
Tinctur. Cinamon. and *Spir. Mastick.*
 Sometimes *Vomiting* may be *Critical*,
 and then it must be promoted, some-
 times

times Symptomatical, from Inflammations, Itching, and from Ulcers; which are to be cured, some with *Theriac*. and *Sal. Viperarum*, some with *Confect. Alkermes* and *Cardiacs*, some by Bleeding, &c.

When Vomiting is stopt, Convulsions commonly Cease, and then Fainting may be cured by Succulent Nutriment, as good Gellies, strong Broths, new laid Eggs, &c. which will strengthen the Patient and Fortifie the Spirits.

The Wound, if not skilfully managed, may become foul, and by too great Suppuration may at last be turned into a Sordid Ulcer, and with the Acrimony of Urine, grow Mordicant and Biting: Such Ulcers are never without Inflammation, Itching, and Excoriation; and sometimes are difficult to Cure, but they

CHAP. XVIII. very seldom happen to the Patient
if the *Lithotomist* be Skillfull.

Deliriums are the last, and are
commonly forerunners of Death.

CHAP. XVIII.

*Of the Cure of the Gravel and Stone
(as far as it will admit) without
Cutting.*

Hitherto for the *Theory* of
this dreadful Distemper,
we have consider'd the several
Causes, Signs, and Differences; the
several ways of *Cutting* for the *Stone*
or *Lithotomy*, and *Symptoms* thereof,
and proceed now to the *Practice*,
for its *Cure* and *Prevention*, and
herein, these things are requir'd.

That


That the *Causes* occasioning it, CHAP. XVIII.
be prevented, and thereby its growth
and increase hindered.

And that when it is grown in the
Body (I speak now of Gravel and
small Stones) it may be remov'd,
and the Pains ensuing be appeas'd,
and the usual difficulty of *Urine*
redress'd.

No Distemper requires more the
Attention and Assiduity of a Skill-
full and Expert *Physician* than this ;
for all the *Specifics*, as the *Aselli*
Minores, *Passer Troglotydes*, or *Hedge*
Sparrow, *wild Pidgeons*, *Goats-Milk*,
Semen dauci, *Garlick*, *Asparagus*, *Te-*
rebinthina, *Balsamus Juniperinus*, and
an Hundred others that have done
good to many, when well applied,
are of little use in the Hands of
the Ignorant : But besides the *Com-*
positions that Learned Men have
Prescribed, were there not the great-

CHAP.
XVIII.

est Judgment and Skill required in giving Medicines for this Disease, every one would be his own Physician, and fall either with *Daffy's-Elixir*, *Tippings-Water*, or *Rogers's Powder*, &c. and these are indeed things much talk'd of in Town, and these People get Money by what they Sell: But this is at random; I remember a Wise saying of the great Man under whom I was bred; The Great *Sylvius*: *Qui forte fortuna curat, forte fortuna necat*: He that Cures by Accident, Kills by Accident: But then I shall be ask'd; What! Are these not good Medicines? give me leave and I'll let you know how far they are, and in which these Men are right, and in which they are wrong; they have Medicines that are good for some People, in some Constitutions, and at some times; but not to all

all People, in all Constitutions, or CHAP.
in all Seasons or Times. Neither XVIII.
is such a Medicine known. 

Daffy's-Elixir is good for Old People, that are Phlegmatic and Costive; for it is made of warm, *Pectoral* and *Carthartic* Ingredients, it has in it *Raisons of the Sun*, *Senna*, *Rhubarb*, *Lignum Vitæ*, *Elle-campain*, *Liquorish*, *Coriander*, *Sweet-Fennel*, *Parsley* and *Annis-Seeds*; and these things are infused in *Aq. Vitæ*, (good *Brandy* would be better, adding a little *Sal. Tartari* to it) this is all, and is a good Medicine for some Persons in some Cases; &c. but not in all, for in some it will do mischief.

Tipping's-Liquor is made with the following Ingredients, (he will not own it perhaps, but I was well acquainted with the Old Man, when
he

CHAP. he Lodged at one Mr. Brent's in
 XVIII. *Aldersgate-street*, and he told me
 freely, well knowing that I had a
 great many as good or better Me-
 dicines) *Saxifrage, Parsley, Eryngo,*
Pimpinella Roots, Winter-Cherries, Ju-
niper Berries, Miliun Solis, Fennel,
Nettle-Seeds, Veronica, Nephritick-
Wood, Sassafrass, Mace and Cinamon.
 These things in proper Pro-
 portions are all Distill'd; and then
 a due quantity of White-Wine;
 in which *Radix Ononidis* is in-
 fused, is added to the Distill'd
 Water, which may be colour'd as
 the maker pleases: And this is
Tippings-Water, and a good Medi-
 cine; but not fit at all times for all
 Persons, &c.

Roger's Pouder is a fix'd Alkaly,
 that I prescrib'd 25 Years ago in
 some Cases, where Acid Humors
 were Peccant, and for Children
 that

that Eat much Cheese, and live
most upon Milk, &c. it is nothing
but Mussel-Shells Calcin'd in a
Crucible, and stamp'd to a Pouder,
which he Sells at Five Shillings
Three Doses, and which does won-
ders if you will believe it; I have
wrote a Thousand Bills to the A-
pothecaries in *London* for the *Stone*
and *Gravel*; and if every Apothe-
cary should expose to Sale his
Nostrum that he has got by mine
or other *Physicians* Prescriptions, we
should be clogg'd with abundance
of this sort of Trash, and the
People might run Mad after such
Medicines to their own Ruin.

Mundus vult decipi, decipiatur.

All the Books of *Physic* are so
full of Remedies and good ones
too, against this Disease, that it is
hard

CHAP. hard for those that are not very
XVIII. Skillful to know which to chuse:
Some have been Cured by *Anodyns*,
(of which there is a remarkable
Story in *Gregorius Horstius*, of a
Courtier that was Cured by taking
first every Day, and afterwards
every other, only one Grain of
his *Laudanum Opiatum*) others by
Alkaly's, and others again by what
is contrary to them.

Dr. *Colebatch* informs us that he
caus'd a Stone to be brought away
from a Woman, by *Salino Sulphurous*
Medicines, that was an Inch and
half and half quarter long, and
Three Inches and half round one
way, and two Inches and half
another.

And last Summer by only giving
some few Doses of *Saline* Medicines
I brought away from Mrs. *Puckford*
(who now Lodges at the *White-*
Swan,

Swan, against Buckler's-Bury, near ^{CHAP.} Stocks-Market) 61 Stones of several ^{XVIII.} shapes, many of which were as large as Capers; they may now be seen, she keeping them by her in a Box.

Yet it is neither this nor that Medicine, but the Skillful Application of 'em that gives Relief; but to go on more Methodically.

First as to Diet in general hear *Forestus*. *Cavere oportet cibaria substantia dura & quæ agre manducatione atteruntur, & quæ multum substantia habent: gravis item qualitatis, & quæ difficulter commutantur & supernatant, & agre per alvum subeunt. Item quæ meatus obstruunt, aut diutius in Corporibus insident. Ex hujusmodi cibis venter labore fatigatur, ipsos aut Crudos aut semicoctos ad Hepar & Renes digerit, & inepte excolati inspissantur.*

There-

CHAP.
XVIII.

Therefore we are to Eat *Meats* that are of easie Digestion, have an inciding and attenuating quality, also choice of *Broaths*, of *Veal* and *Capon*, prepared with *Charvel*, *Sorrel*, and *Barley*; especially in the Spring of the Year, in which Season, Sobriety and Moderation, ought particularly to be observ'd and convenient Exercise, &c. us'd.

The six *Non-naturals* are also to be considered. As to *Physic*, in Cases where there are *Crudities*, give no *Diuretics*, but first a good *Emetic*.

Pituitam Evacuare, etiam utile & Diasofticon. Et enim hanc viis Urinariis Communicat totum Corpus, vitio præsertim ventriculi languidioris, Excrementa multa ex improbo victu congerentis, quæ ad Renes delata in Lapidem tandem indurantur Præyot.

A languid Stomach, having received unprofitable Food, breeds much *Excrementitious Humours* which clogg the inward Parts, and being brought to the *Kidneys*, breed *Gravel*, and cause other Obstructions.

CHAP.
XVIII.

After Vomiting, *Terebinthinate Medicines* and the *Mineral-Waters*, are often excellently useful to dissolve the Matter, (which by Excesses is generated) and carry it away with *Gravel*, &c. the latter also mitigates the heat of the *Reins*, to which those afflicted with *Gravel* are frequently incident: Bleeding is often very Requisite to abate an *Inflammation* occasion'd by the *Stone* and *Gravel*.

If a *Stone* be formed in the *Kidneys* and be small, let it be remov'd with proper *Medicaments*; but first, if the Patient can take it without inconvenience

CHAP.
XVIII.

inconvenience, give *Ol. Amygd. Dulce*, or something of that Nature, to Lubricate the Passages, to which may be added *Succus Limonum & Vinum Album*, as the Physician thinks proper.

A Man above 60 Years Old voided by the help of *Ol. Amygd. Dulce*, and a few drops of *Balsamum Naturale*, 65 Stones in the space of Ten Days; and *Avenzoa* says, That with the same Medicine he Cur'd a Scrivener that was brought to Deaths door with the Stone.

Emollient Clysters with *Chamomill*, *Lillies*, &c. are likewise very useful; the following is good; *R Rad. Alth. ʒi. Herb. Malv. Paietar. Mercurial. ana. Mi. Sem. Lini ʒʒ. Decoq. cum Aq. Commun. ʒi. Colatur. add. Terebinth. Ovi Vitello solut. ʒʒ. Ol. Lini ʒii. Elect. Lenitiv. ʒi. M. F. Clyster.*

Some

Some make these sort of Clysters CHAP. XVIII.
cum sapone Castiliensi, and instead of *Aqua pura*, take *Urina Hominis sani*.


After Clysters let Diuretics be given, but not without the Advice of a Physician, least mischief be done.

Lacuna a renowned Physician, who wrote most learned Commentaries upon *Dioscorides* in the Spanish Tongue, affirms, that he frequently Cured suppressions of Urine from the Stone and Gravel, by giving *Raison Stones*, in Chicking Broth, for that when nothing else would do, it brought away large Gravel and a Stone, that stuck so fast in the Urinary Passage, that by all other Physicians the Patient was reckon'd past Cure.

And thus simple Remedies when skillfully prescrib'd according to the Patients Constitution, Symptoms of the Disease, and other ac-
 R cidents

CHAP. cidents of time, &c. often prove
 XVIII. very Efficacious, when the most
 celebrated Medicines being wrong
 tim'd, or given without regard to
 the Patient's habit of Body, or con-
 trary to a right Indication, &c.
 instead of proving serviceable may
 be destructive and cause Death;
 What shall we say then to those
 boasted Remedies before-mention'd?
 which are said each of 'em, to
 serve for all the Intentions of Cure.
 I would not injure or bespatter the
Authors or Proprietors of such pre-
 tended *Arcana*, but really it were
 better they kept to their *Trades*, for
 Hundreds of Persons have been un-
 done by untimely *Diuretics*, &c.

Suppose a Patient should have
 a Stone or Stones too big to move,
 as was the Case of a Gentlewoman
 my Patient, whose Husband I in-
 form'd that she could not recover;
 and

and desir'd that when she died he ^{CHAP.} would send for me to have her ^{XVIII.} opened: (I have named her before,  Mrs. Gripp): If I had given this Woman any *Diuretics*, she would have miscarried the sooner. Such cases ought only to be Palliated with *Fomentations*, *Catalplasms* or the like *Externals*; some *Mucilages*, *Anodynes*, and *Emulsions* may also be given internally: Further, add to the former a Bath of fresh Water, with Emollient Herbs, and some of those call'd *Lithontriptics*, which being properly us'd, will sometimes effectually relax the Passages; the following proves very serviceable.

R. Rad. alth. ℥i. Folior. Malv. perietar. Chærefolii. Flor. Chamomill. Melilot. an. M. iv. sem. lini ℥i. Malv. Petroselin. an. ℥i. decoq. in aq. Commun. ad ℥i. pro Fotu:

R. 2

Re-

CHAP. XVIII. *Reliquia decocti deinde Pistentur & F. duo sacculi quadrati, qui post fotum pannis Wallicis Expressis, lumbis calidi applicentur.*

These things, according to their several requisitions preceding, do good, at least if they do not Cure, they will mitigate the Symptoms, and cut off part of the Matter that breeds the Stone, but will kill no body: And what I have said concerning Quacking-Remedies, I wrote without Envy, for I have lived here near 40 Years, and it is fit I who have observed many irregular ways in the Practice of Physic, and especially in the Stone and Gravel; it having been a great part of my Study, should give all the necessary Hints and Cautions in this difficult Point of Physic, to preserve the Afflicted from Ruin, and the Young Physician

sician from making mistakes in ^{CHAP.} Practice: Could I not name Per- ^{XVIII.}
sons, Time and Places, in whom, when, and where, I have seen miscarriages by irregular Administration of Physic? Is it not irregular to give an *Elixir* before named, made of hot and Spirituous Ingredients, in *Ardent-Fevers*, in *Vigils*, in great *Thirst*? in *Hætick* Persons, *Consumptive* People, in *Dysenteries*, in *Inflammations* both of *Kidneys* and *Bladder*? Read *Sennertus Lib. iii. Practic. Part vii. Sect. 1. cap. viii.* Read *Heurnius in Prax. Med. Lib. ii. cap. xii.* Read *Galen Lib. xiii. Method. Medend. cap. vi.* Read *Riolanus Method. Medend. Particul. cap. de Rerum Inflammatione*, who all inform us, that such sort of Medicines, especially being hot, we must refrain prescribing, for they
R 3 bring

CHAP. XVIII. bring more Morbific matter to the afflicted part and increase the Disease, &c.

Dionysius Fontanus (*de Morborum Internorum Curatione cap. xxxvii.*) orders Moistening, moderately Cooling, and Balsamic Medicines in these Cases; but nothing that is Sharp, Sweet or Purging.

I have seen *Tipping's-Water* given in a *Diabetes*, and *Daffy's-Elixir* in the *Gout*; but with what success any one may judge.

Calida & Acris non sunt addenda calidis acribusq; peccantibus Humoribus.

I have met with many of the Female Sex (*Nimio Menstruorum fluxu laborantibus*) who having Pains in their Backs, took those Quacking Diuretics, which increas'd the Disease and brought them to Deaths-door, and who afterwards by means of Bleeding, gentle Restrincts,

gents, and Laxatives, &c. which CHAP. as the Case requir'd I prescribed, XVIII. were perfectly recover'd.

Joannes Walæus tells us, that *Diuretic Medicines* are better in the Winter than Summer, better in the Morning than in the Afternoon, before Eating, and on an empty Stomach, than the contrary, better when the Disease is declining then when in full Vigour. See *Walæus* in *sua Method. Med. Titulo de Diureticis* P. M. LXX. where he also gives his Reasons for what he lays down.

Guialterus Bruele, in *sua Praxi, Medicina Theoretica & Empyrica Familiarissima* cap. de Curatione Calculi P. M. 343. says;

That before you give *Diuretics*, you should gently Purge, or mingle with *Cathartics* small quantities of *Diuretics*, but the aforementioned

R. 4

Wallæus

CHAP. XVIII. *Walæus* tells us, that some of his Patients took *Cathartics* and *Diuretics* together with ill success. Read his Words

Quidam simul & eodem tempore, & alvum ducere & Urinam Movere voverunt, verum infelici successu. Walæus.

Guilielmus Fabritius Hildanus in his Chirurgical Observations, the 3d. Century, the LXXII Observ. P. M. 255 and 256. observes from *Rondeletius* in his method of curing Diseases, Chap. ix. that all *Diuretic Medicines* force the *Serum* to the *Kidneys*, and cause Stipticity in the Bowels. The Body ought to be kept open, for which end prescribe *Cassia*, *Manna*, *Purging-Waters*, &c. as the Case requires.

When ever *Diuretic Medicines* are prescribed in a dry form, it will be convenient to give them with warm'd *Mead*, *Whey*, or *White-Wine*,

Wine, which will cause them more CHAP.
easily and quickly to get to the XVIII.
Mass of Blood, and thence to the
Kidneys, than otherwise they would.

Rx Sal Prunell. ʒß Cochinel. Ocul.
Cancr. Test. ovar. Calcinat. Sal sambuc-
vel Sal. Stipit. Fabarum an. ʒi. Croc. opt. gr.
xv. Ol. Junip. gutt. vi. M. F. Pulv. in
Chart. iii. Divid.

This Powder will do a great deal more than that sold by Mr. Rogers, &c. and when given according to Art, with regard to all Circumstances, and a true Indication; it will Attenuate the Blood and Juices, cause a plentiful Secretion of the Serum, solve Gross Viscid Matter, and bring it forth by Urine with Stones (if passable) and Gravel: When Diuretics are proper, the following Apozem (of which the Patient may drink at his pleasure) is good.

Rx Rad.

CHAP. XVIII. *Rx Rad. Ononides foenic. petroselin. Liquirit. Ras. an. ʒß. Sem. Alth. Malv. Cicer. Rubr. an. ʒiß Sem. 4. frigid. Maj. an. ʒi. Fic. ping. N^o. v. Sebesten. N^o. iii. Hord. Mund. ʒi. grana Alkekeng. N^o. vii. Decoq. in aq. Commun. ad ʒbiß. Coletur. add. Syr. de Limon. de quinq. Rad: an. ʒi. M. F. Apozema.*

The following Draught being given now and then in a Morning, sometimes proves very serviceable.

Rx Aq. Rad. Ononides, Aq. Raphan. Comp. Vin. Rhen. an. ʒii. Oculor. Cancr. ʒß. M. F. Haustus.

And the next being taken Night and Morning, has great Efficacy.

Rx Oculor. Cancr. Sal. Prunell. Cremor. Tartar. an. ʒß. cum aq. petroselin. ʒii. & Syrup. Dialth. ʒiß. M. F. Haustus.

But

But these as well as more powerful *Medicaments* that may be pre-
scrib'd, must be chang'd, alter'd,
or varied according to the State of
the Patient, &c. as a skillful *Physician* shall direct, otherwise instead
of the *Disease* being Cur'd the Pa-
tient may be spoil'd.

CHAP.
XVIII,
~

When *Diuretic Medicines* have
been taken, the Patient ought
gently to move about, for by that
means the *humours* are made more
liquid, the *Diuretic* sooner pro-
pell'd, and making of Urine is ac-
celerated. If the *Operation* goes on
but slowly, he should drink warm
Rhennish-Wine, or other Liquor,
that promotes Urine: if that does
not do, let the Patient be anoint-
ed, and *Friktion* be used, or apply
warm *Fomentations*, *Diuretic Cata-
plasm*s, or lay on *Blisters*, &c. what
Cantharides will do in this affair, I
have

CHAP. XVIII. have sufficiently treated in my Book, *de Tuto Cantharidum usu Interno*: Nay, Externally they also Irritate the *Urinary Parts*. The *Loyns* being Anointed downwards quite to the very *Groin*, with the following *Liniment* may often prove very Beneficial in relaxing the passages, that *Gravel* and small *Stones* may pass through and be Evacuated.

R \acute{e} Ol. *Lilior.* Albor. *Amygd.* Amar. an. $\mathfrak{z}\beta$ *Scorpion.* pingued. *Gallin.* an. $\mathfrak{z}\text{ii}$.
M. F. *Linimentum*.

These and the like Methods regular *Physicians* take, but to the *Vulgar Pretenders*, who do not understand the true Practice of *Physic* or know any thing of the fore-mentioned *Rules*, the very best Medicine, is, *Gladium in Manu fur-
rentis*: A Sword in a Mad-Man's Hand.

Further,

Further, as long as a *Diuretic* is CHAP. XVIII.
working, or in agitation, the Pa-
tient must not Eat, for that causes
a Retraction from Nature, if they
do Eat, *Chylification* will be spoil'd,
for the Stomach will give way to
crude and inconcocted humors, which
will rather augment *Obstructions*,
and create *Gravel* and the *Stone*,
then remove the same. When the
force of the Medicine declines, be
not too busie in provoking *Urine*;
(*in medio consistit virtus*) for if there
be no more *Serum* to be Evacuated,
you will often see the *Blood* come
instead of it; *omne nimium Naturæ*
inimicum.

Therefore after the force of the
Diuretic Medicine is over, you must
not drink much *Aqueous*, *Spirituons*,
or *Volatile Liquors*.

If too much *Urine* comes away,
and you have over done it, Cor-
roborating, *Subauftere*, and Re-
stringent

CHAP. strigent Medicines must be given;
XVIII. and the Patient must then keep
from those *Liquors* that are perfectly Fine, and have purg'd themselves from their gross and dissimilar parts, (tho' they are good at other times) because they most readily pass off by Urine; for the thinner the *Liquor* is, the sooner it passes, and especially if it be drank when the *Stomach* is empty, for then, making no long stay there, nor being entangled with the other Parts, the whole quantity insinuates into the *Blood*; where for want of a due medium of some grosser Parts, it does not so intirely or perfectly mix; and for that reason the sooner goes off with the *Serum* by *Sweat* or *Urine*; if it works too much by *Urine*, let the Patient keep in Bed, and it will commonly go off by *Sweat*, which then
would

would be the best way ; but if you would have it go off by *Urine*, you must not keep in Bed, but arise and move about as I said before ; for then, not being encompassed with an equal or sufficient warmth, it cannot Evaporate by the *Pores*, but will run off by the *Kidneys* : *Diuretics* seldom enlarge *Urine*, when the Body is too hot (which may serve as a hint worthy the Observation of those at *Tunbridge*, not to drink the *Waters* in Bed) it is a common and true saying, that when Men Sweat most, they usually Piss least ; and when they Sweat least they Piss most : *Sudoris enim & Urinæ una eademq; est materia.* Sylvius.

If I should go further, I must come to the Motion of the *Fluids*, and the several *Secretions* that are made from thence, and account for

CHAP. XVIII. for the disorders in the *Animal Oeconomy*, for which I have neither room or time.

But by what I have wrote, any Person may see the danger a Patient undergoes, in adventuring upon Medicines given by Ignorant Men, (who's Profession it is not to meddle with such things,) however they may be cried up: A poor Clark in *Old-Change* was out-right kill'd, not many Months ago, by the irregular practice of an illegal Undertaker; I could name Scores of 'em. *Nulla pœna Constituta est Medicinæ nisi Ignominia*: The Law should take place in such cases!

Thus far I have laid down what Caution we are to have about *Gravel* and *Stones* in the *Kidneys*, which if small upon the foregoing Considerations, the next Indication
is

is to remove 'em as before taught : CHAP.
XVIII.
But we must not at all endeavour
to force a large Stone from the
Kidney ; for if it be removed into
the *Ureter*, the tormenting Pain
that attends it, often causes Con-
vulsive Motions, and Swooning,
which ushers in Death, unless time-
ly mitigated by *Intrinsic Remedies*,
External Fomentations, &c.

*Natura a Renibus usque ad Vesicam
ureteres angustos admodum reddidit, in
quos si calculus decumbat eisq; impactus
hæreat, intumescitio interna, febris,
sepe etiam delirium, Lipothymia, ali-
aq; periculosa Symptomata sequuntur ;
adaucta postmodum Inflammatione &
Subsequente Gangræna de hominis vita
actum est.*

Hildan. Cap. 25.

S

Thus


CHAP.

XVIII.

Thus it is Evident when large Stones are in the *Kidneys*, they must not be forced thence, (do not wake a sleeping Lyon!) whence the case must necessarily be very difficult and dangerous.

Now whether there be any thing in Nature that will dissolve such a Stone in an Humane Body, has long and much been controverted, if it be brittle and of a lax substance, that it may be broken, is not disputable, experience sufficiently confirms it; for which purpose *Matthiolus* and *Dodonæus* do attribute a wonderful Efficacy to that which we call *Virga Aurea*, and *Arnoldus De Villa Nova*, thereto subscribes his *Probatum*, as excellent in *Syrup*, *Paste* or *Electuary*.

Of that kind is suppos'd to be the Medicine of Dr. *Robinson*, which
is

is the *Tincture* of *Pilula Matthæi*: CHAP. XVIII.
so is the *Pulv. Millepedum*, with which, 
Hartman acquaints us; a Stone larger
than an Hens-Egg, has been
broken; and the Learned *Laurenbergius* assures us, that himself
has been cured thereof by the same
Medicine.

Peradventure sometimes Imagination may add to the Efficacy of the *Medicine* and make it the more prevalent: *Crollius* rightly observes that there are many cured of Diseases by *Imagination* only; for Nature often submits to the Thoughts, and vehement desires of the Soul, and our Spirits being affected, the Body is affected also, in which the Spirits do reside.

That *Spirit. Nitri* will break the Stone of Man's Body, when it is out of the Body, is most certain, having been experienced; but such

CHAP. XVIII. a quantity thereof, as is requisite hereunto, is not at all to be given inwardly, or injected into the Bladder, without being much Diluted and then its force is lost.

The *Nephritic-wood*, and the *Sanguis Hirci*, &c. which the most Learned Dr. Crell, Physician of our College, has made so Famous in the Practice of Physic in sundry Cases, are recommended as *Lithontriptics* of no inferiour Efficacy, duly administred.

But because the Foundations of future Health are perhaps laid in the first Conception, from whence the Good or Evil principles of Health may be transmitted to the Off-spring; therefore an Hereditary disposition to the Stone may not be supposed Curable by any Medicine. *Hujus Viri Natura ita Constituta erat, ut si hodie ipsius Renes*

& Vesica ab omni arena & calculo expur-
 gebantur, subsequenti tamen die novi sub
 oriebantur : ab hoc enim Viro ultra 300
 calculos per Medicamenta propria foras
 eduxerat. Hildanus.

CHAP.
 XVHI.

Those that are curious to
 find out Medicines to break Stones
 either in Kidneys or Bladder, may
 read the following Authors and try
 the Medicines recommended, as
 the Nephritick Liquor of Mynsicht.
 Armament. Pag 338. Mistura Muffeti
 Angli Cistæ Medicæ, Pag. 34. Ex-
 pulsorium Calculi Zuingeri Cist. Med.
 Pag. 35. Saxifrag. Libavii in Alchemiæ
 Pharmaceutic. Cap. 35. Quercetan.
 Crollius in his Basilica Chymica, Lib.
 3. Cap. 21. Hac sunt Lithonbripti-
 corum Selectissima, says Guialterus
 Charleton, M. D. in Spiritu suo Gor-
 gonico. Pag. 239. Where you may
 also find the new Catheter, invent-
 ed by Van Helmont. Pag. 240.

CHAP.
XVIII
W

To break a Stone, follow Charleton in his *Diatriba de Lithiasi*, his *Scopus Secundus Curativus*, viz. *Calculi in prima sui entia, analysi retrograda, resolutio*: That is a Resolution or Breaking of the Stone from its first beginning (*analisi retrograda*) to break first what cohered and petrified last, and to distory last what petrified first: There you will find a laborious method and when he has done he calls it (*Nugamenta*) meer Trifles, Toyes, *Res nullius pretii*, &c. A certain Author upon this head has these words: I would advise those, who are not very skillful in the Art of *Physic*, to forbear giving of any thing in these Distempers, without the Assistance or Advice of an Experienc'd Physician; for I believe many Stones have been bred in those Bodies (that before were free from it) by the

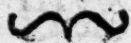
the frequent taking of Medicines CHAP. XVIII.
which have been invented to dis-
solve the Stone. *Johnson. Enchyr.*
Medic. pag. 262.

The solvent of the Stone, to be taken inwardly, ought to be *Homogeneous*, and so singular, that it submit not to any Digestion, or Fermentative Power, through which it passeth in its way to the Parts affected; for the vertue of most Remedies taken at the Mouth, are altered and transmuted in passing several Digestions.

Now I shall sum up the whole in the *Latin Tongue*.

‘*Ipsos Renes vera Inflammatione occupari scimus ex dolore ardente, pungente, magno, Inflammatorio loci ubi Renes siti sunt; ex febre acuta, continua concomitante; ex Urina pauca, sæpe parva Copia, Emissa, admodum*

CHAP.
XVIII.



‘ modum rubra & flammea, vel in
‘ summo malo aquosa; stupore
‘ Cruris vicini; dolore Inguinis,
‘ testisq; Vicini; dolore Iliaco, vo-
‘ mitu Bilis, ructu assiduo.

‘ Hanc producunt omnes causæ
‘ generales Inflammationis renibus
‘ applicatæ; adeoq;.

1. ‘ Quicquid fines arteriæ ad
‘ transmittendum impedit, vulnus,
‘ Contusio, abscessus, tumor, de-
‘ cubitus diuturnus, nixus Corporis
‘ validus, Lapillus.

2. ‘ Quicquid urinam in Pel-
‘ vim, ureterem, vesicam transire
‘ Impedit, ut similes causæ, ac
‘ mox enarratæ, applicatæ his Par-
‘ tibus.

3. ‘ Quæ Crassiora Sanguinis vi
‘ adigunt in canales urinosos, ut
‘ Cursus, equitatio diuturna & ve-
‘ hemens, æstus, nixus, Plethora,
‘ diuretica acria, Venena.

4. ‘ Spas-

4. ' Spasmodica Contractio omni-
' um illorum vasculorum diu per-
' manens. CHAP.
XVIII.

' Si summa Inflammatio hæc
' vascula occupat ita sæpe stringun-
' tur, ut nihil reddatur lotii: ali-
' quando ut valde parum, pelluci-
' dum, tenue, aquosum, quod
' pessimum. Irritatis sæpe nervis
' Cohærentibus & vicinis,, dolores
' & Convulsiones facit per Stoma-
' chum, mesenterium, Intestina,
' ureteres; unde ructus, nausea,
' vomitus, dejectiones alvi, Ileus
' (*sive miserere mei*) urina intercepta,
' crurum stupor, horum Immobi-
' litas, lumborum ardor.

' Sanatur bonitate naturæ &
' morbi. 1º Per resolutionem. 2º
' Urina Copiosa, ruffa, Crassa,
' continuato fluore reddita antediem
' morbi septimum, aut ad sum-
' mum

CHAP. ' mum quartum decimum. 3°
 XVIII. ' Hæmorrhoidibus initio morbi
 ' large fluentibus.

' Sanatur, ubi in Statu Inflam-
 ' mationis per sua signa noscitur.

' 1° Per remedia generalia, omni

' Inflammationi sanandæ propria,

' venæ Sectionem, avulsionem, Di-

' lutionem. 2° Decocta Lenia,

' Emollientia, anti Phlogistica mag-

' na copia ingesta. 3° Clysmata,

' fomenta, Balnea, ex iisdem Con-

' stantia. 4° Victu humido, leni,

' quiete, vitatione lecti Calidi, im-

' primis autem decubitus in dorso.

' Si nimia symptomata doloris

' vel Convulsionis urgent, opiata

' profunt.

' Vomitum autem nimium, mor-

' bi Symptoma, sæpe ingestu te-

' pidæ mellitæ juvare prodest.

' Atq;

‘ Atq; hac sola methodo tuto
‘ Curatur ipsa Nephritis a calculo,
‘ renibus, ureteribus impacto,
‘ orta.

‘ Si causæ nephritidis magnæ,
‘ nec malum resolvitur, nec Sana-
‘ tur, sed excurrit ultra septimum
‘ diem, abscessus metuendus; quem
‘ fieri docet remissio doloris, ejus in
‘ Pulsationem mutatio, horror sæpe
‘ recurrens, gravitas, stuporq; par-
‘ tis; jam factum esse docet præ-
‘ gressus priorum, tum pulsus, ar-
‘ dor, tensio in loco, urina puru-
‘ lenta, foetida, instar urinæ falsæ
‘ Putrefactæ: Simul ac abscessus
‘ ille factus scitur, utendum valde
‘ maturantibus primo & emollien-
‘ tibus, dein purulenta apparente
‘ urina, diureticis puris ex a-
‘ quis medicatis, mineralibus, fero
‘ lactis, similibusq; usurpatis simul
‘ Balsamicis.

‘ Si

CHAP.

XVIII.



' Si vero suppuratio illa diu du-
 ' rat, totus ren Exesus saccum for-
 ' mat, nulli usui servientem; tumq;
 ' frequenter *Tabes Renalis* adest.
 ' Si scirrhum hic format, Paralysis,
 ' vel claudicatio cruris suppositi
 ' oritur, *immedicabile malum*: Unde
 ' sæpe lenta *Tabes*, *Hydrops*, &c.
 ' Si autem Parva Copia Materix
 ' Inflammatae coagulata in folli-
 ' culo urinæ minimo hæserit, basin
 ' format, cui apposita sabuli in
 ' urina materies crustatim accrescens
 ' calculum renalem creet, sicq;
 ' eundem augeat.

' Quin etiam in Gangrænam tran-
 ' sit, quod docet Vehementia causæ,
 ' symptomatum, absentia levaminis
 ' per Remedia, & subita remissione
 ' doloris sine causa, cum sudore fri-
 ' gido, pulsu debili, intermittente, sin-
 ' gultu, urina vel nulla, vel livida,
 ' nigra, capillosa, foetente, carun-
 ' culis

'culis fuscis nigrisve fœda, defectu
'virium subito, summo: ubi nihil
'juvat, imo nec ipsa Medicina.

CHAP.

XVIII.



'Hinc patet infinitas esse Nephri-
'tidis species causasq; & inter eas
'unam a calculo, tamen esse om-
'nium eandem ferme curationem.

These usefull *Aphorisms* I have
taken from that Learned and most
Ingenious *Philosopher* and *Physician*
Hermannus Boerhaaven, M. D. at
Leyden, with which I would dis-
miss my Reader, but that I have
something to say about *Lithontriptics*,
which I promis'd before.

CHAP.

CHAP.

XIX.



CHAP. XIX.

*Of Lithontriptics, by way of Apology
to the Art of Lithotomy.*

Following the common Road of Authors, I have spoke of, and prescribed *Lithontriptics* as others do, but whether there are really such Medicines, that are able to Break, Waste, or Dissolve the Stone, whilst it is in the *Kidneys*, and but newly made, I intend not to examine into, much less dispute.

But the *Lithontriptics* I shall speak of, are only those *Gigantick Remedies*, that slighting all the *Mutations*, they are forced to undergo in the Body, still preserve a peculiar *Vertue*, by which they are capable,
to

to Break or Consume a Firm or
Solid Stone, that torments the
Bladder, the principal seat of its
Tyrannick Empire.


CHAP.

XIX.

If indeed such Remedies were certainly to be had, whoever should expose People to that exquisite Pain, and immediate danger of their Lives, which are both so unavoidable in the Operation of Lithotomy, ought to die no other way, than by the Hands of the Common Hang-Man.

Wherefore I never wond'red, that those Physicians, who were of Opinion that there were such Remedies in *rerum Natura*, exclaim'd against the Barbarity of Lithotomists with so much violence as they have done; but I think also, that those Physicians are still more Barbarous, who being possess'd of those noble Medicines, by keeping the Se-

cret

CHAP. **XIX.** cret to themselves, suffer their fellow Creatures to be, as they call it, so inhumanly dealt with: To pretend that it would be a Sin, and displeasing to God, if his adepts should reveal or dispense those *arcana* to the Vulgar, is a trifling if not an Impious plea. One of the greatest Enemies of this Operation was Dr. Charleton, as may be seen in his *Diatriba de Lithiasi*: That Learn'd Physician did not Vaunt, that he knew such a Secret, but he not only believed that others did, but likewise was so angry with those that desir'd to be assur'd of the Existence of it, that he accuses them of Implicit Blasphemy, quoting for that purpose the Words of *Van Helmont*, who says, *Si quis peccando contra hoc peccatum quidni benedendo eandem radicatus tollat?* Insinuating what Charleton says, that they

they Sin. Omnipotentis manum impie
curtando, & Creatorem vel ignorantia
vel obliviscentia, vel immisericordia,
quasi non potuit creare adequatum &
victoriosum remedium cuilibet morbo,
vel nescivit, vel noluit, temeritate plus
quam Paganica accusando And yet
after all, the greatest reason he
gives, why he believes that there
are such Medicines, is, because he
has read Modern Authors, that
say they have such, and among o-
thers he quotes two instances,
on which he seems very much to
rely; The first is that of Cardanus,
who, in *Libr. de varietate rerum*, re-
lates: *Sua etate virum per Longobar-
dos oberrasse, qui paucis diebus quodam
poculo passim, secure, certo, citoq; sa-
nabat quotquot Calculos in Vesica habe-
bant: Et mox subjungit, se non
dubitare hunc virum in inferis esse,*
T quod

CHAP. quod moriens artem suam mortalibus
 XIX. Inviderit. The second, which he
 puts great stress upon, is, what
Van Helmont likewise makes use of,
 the Epitaph of *Paracelsus*, which
 runs thus: Conditur hic Philippus
Aureolus Theophrastus Paracelsus in-
 signis Medicinæ Doctor, qui dira illa
Vulnera, lepram, podagram, hydro-
pisim, aliaq; insanabilia corporis con-
tagia mirifica arte sustulit, & bona
sua eroganda in Pauperes, elocandaq;
honoravit, &c.

Van Helmont, thinks that under
 the *insanabilia* here mention'd, must
 be reckon'd likewise *Astma's, Con-*
sumptions, and the Stone.

As to the first of *Cardanus*: If
 we believe all that is reported of
 Mountebanks (for by using the
 Word *oberrasse*, he seems to mean
 Mountebanks) there has been a-
 bove

bove half a Score in London that have done the same. To the second I shall only say, that if all Inscriptions on Tombs are true, most People that left Wealth or Fame enough to purchase them, are certainly gone to Heaven; since they are all noted *Panegyricks* upon the Dead, and in my Opinion very weak Arguments to prove Truth by. *Sed quam parum sibi Constant etiam viri Eruditissimi!*

That great Man (Dr. Charleton) for whom I have much Veneration, in many places extols *Van Helmont* to the Skies, and calls him *invictus Spagyrorum Corypheus*. And yet in another place he not only refutes his Hypothesis of the *Duelech* or Stone in the *Bladder*; but likewise accuses him of Falsity and telling notorious Lies, using these words:

T 2

Lan-

CHAP.

XIX.

Languidam non nisi experti sumus opem ex præfidiis antigorgonicis, quibus certissimo tanquam asylo miseros calculosos humana cum fiducia delegavit, interimq; Coagulatoris excidium, imo Confirmati jam Duelech resolutionem conversione retrograda in primam sui materiam Conscripsit. Now if these Adepti write Untruths themselves whilst they are Alive; I do not know, what reason we have to heed what their Friends say of them when they are Dead.

If there be them, that know those Arcana and Excellent Remedies (as one in the Fall-Mall, who at least has pretended so for many Years) all my Wonder is, that we see no effect of it: These Gentlemen by an Opiat give Ease, which is but a Trick, and does nothing in the main as to breaking
ing

ing of the Stone; and for my ^{CHAP.} part, I declare, tho' I have been ^{XIX.} as conversant with this Distemper, as any body, I never knew one freed from the Stone in the Bladder, if it was too big to pass the Urethra, but by Cutting. I do not say it is impossible, that such a Remedy should be found; but considering how little even the greatest Chymists despise Gold, and the vast Treasure, besides an Eternal Glory that might be got by such a Medicine, I think it is highly improbable that such a Remedy is found out yet. I desire then, that the great Enemies to the Art of Lithotomy would be more considerate, and not blame us, who, to deliver People from an unspeakable Calamity, make use of such a violent method, whilst o-

CHAP. ther effectual means are want-
XIX. ing.

The Operation I own is difficult, and ought not to be perform'd but by Skillful Hands, and never to be undertaken but by well Instructed Men. If some People knew what belongs to it, they would not think the Practice below a *Physician*; I know it has upon that account in some measure Eclipsed my Practice in *Physic*; but how ridiculous this is, every body may see, that reflects on the famous *Physicians* who did the same; *Cornelius Celsus* that Renown'd *Physician* amongst the *Romans*, the great *Mages Ammonius*, *Joannes Antracinus*, *Sanctus Barolitanus*; Were they not the greatest Practitioners of their Times? and yet they were *Litbotomists*, and Cut for the *Stone*.

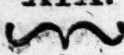
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The Cure it is true, is hazar-
dous; but then the Torments oc-
casioned by the *Stone* are insuffer-
able; and if some of my Patients,
as they do of others, have died
by *Cutting*; yet by the same *Cutting*,
for my own share I have freed from
that cruel *Disease*, Two Hundred
Fourscore and more, that have lived
and done well after it, and whose
Names I can at any time produce,
with the Days, Months, Years, and
Places, when, and where they
liv'd.

CHAP.
XIX.

These without *Lithotomy* must
either have quickly died, or else
have been miserable almost every
moment of their Lives.

Let any body shew me that
he has a Remedy, that Cures the
Stone, and I'll Cut no more: It
is perhaps from the Art of *Chy-*

CHAP. *mistry* that we may expect this
XIX.  Miracle; and I confess I have
tried little that way. *Non omnia
possumus omnes*: But if the Ingeni-
ous Physician, Mr. Benjamin Marten,
who is a great lover of Chy-
mical Experiments (and now con-
cern'd with me in *Lithotomy*) thinks
fit to search after such a Remedy,
I shall be so far from discouraging
him, or indeed others in pursuit
of such a noble end, that I shall
heartily wish them Success, as I
have always unfeignedly done to
all, that endeavour'd the Benefit
of Mankind.

Post-

POSTSCRIPT.

WHEN I had finish'd this Treatise and made it ready for the Press, I was sent for to one Captain Rogers's, over against Shadwell-Church, in Ratcliff-High-way; The Patient was his Little Son of 22 Months of Age: I found the Child in great Torment, and the Parents told me that he had been so for a Fortnight; an Eminent Physician had prescrib'd several Medicines, but all in vain, at last he began to suspect the Stone, and advis'd them to send for me, the Captain at first could not believe it possible, alledging, that himself, nor his Wife, nor the Parents of either, had ever been troubl'd with the Stone or Gravel; and that they

they had never given the Child any thing that is forbidden in that Distemper: However I was sent for, search'd the Child, and found a Stone, and two Days after I Cut the Child very Successfully, and took out the Stone, of the bigness of a large Filbert.

Tho' in this Case there seems nothing remarkable besides the Youth of the Child, yet I thought it not unworthy of Observation, for two Reasons; the one *Theoretic*, and the other *Practic*.

As to the first; That a Child, where this Distemper could no ways be suppos'd Hereditary, and that never Eat, or Drank any of those things that are said to cause, or encrease the Stone, should yet be afflicted with it so soon, is a certain Argument, as well, that the first and Efficient Cause of the Stone

Stone is in the Urine it self, even the most Limpid, and seemingly Inoffensive; as likewise, that the second and Auxiliary Causes, that may produce it, are, if not unsearchable, yet very abstruse, and more unknown, than we imagine.

The practical Reason, why I think it worth observing is this; that when Infants (whose Parents were never troubled with the Stone) are so Young, that they can make no Complaint besides Crying, which they promiscuously use to express every Ailment; they may often be troubled with the Stone, when it is not in the least suspected: There are indeed but few Examples of Children, that are Cut so very Young, and in all my Practice, I have Cut but one Younger, and that was a little Boy but 18 Months Old,

Old, from whom I took away a Stone as big as a Nutmeg, and recover'd the Child.

But that I have had so few Young Children, confirms me the more in my Opinion; for that Infants may be afflicted with this dreadful Distemper almost as soon as they are Born, is evident from Experience: I my self have taken several Stones out of the *Urethra* of some Children within the Month, and of others two or three Months Old, that if the Stone had not been discovered, in all probability must have died in the greatest misery; and that Children die of it so Young, is unquestionable from several, in whom Stones have been found, when opened after their Deaths. The Learned Dr. *Tyson* shew'd me such a one which he took out of the Bladder

der of a Dead Child, not above Nine Months Old, which was round and rough on the outside, like a Mulberry, and as big as a middle-siz'd Marble, such as Boys Play withal. Which Stone I question not but has been found amongst the Rarities he left behind him.

It is reasonable therefore always to suspect a Stone in Children, tho' never so Young, where *Carminative* and *Anodyne* Medicines being given without success, the Infants continue to appear in great Torment, especially if twisting their Leggs they foul themselves backwards, at the same time that they make Water; that being a very great Symptom of the Stone.

Wherefore I would advise People in such Cases, always to send for an Expert *Lithotomist* to search them;

them; and if there be no Stone they are rid of that Fear, and if there be one, it is still a Comfort, that in such a tender Age, *Omnibus Paribus*, the Operation is less dangerous and infinitely less difficult than in grown People.



FINIS.